# SONY®

Operation Software
# BZS-6020

## SUPPLEMENT  Rev.1  [ English ]
Software Version 1.20 and Later

Manual to be supplemented
**BZS-6020 User's Guide**
**1st Edition**
**Serial No. 10001 and Higher**

Digital Video Switcher
# DVS-6000/6000C

# Introduction

This is a supplement, containing a description of supplementary functions and changes in the BZS-6020 Operation Software. Replace the corresponding pages in the User's Guide with these pages, or add the new pages.

This supplement (9-967-489-05) supersedes the supplement 9-967-489-03.

## New functions supported in Version 1.20

The following functions are described in the User's Guide for Version 1.0, but are supported for the first time in this version or are new functions.

| Function | See page/chapter |
|---|---|
| • SHOT BOX block key frame and utility buttons | 2-10 |
| • Last menu | 3-6 |
| • NAME function in the "XPT ASSIGN" menu of the set-up menu | 3-7 |
| • Key frame functions[1] | 5-29 |
| • Registers | Chapter 7 |
| • Disk functions (COPY, RENAME, LABEL) | Chapter 8 |
| • Matte swap function | 9-11 |
| • GPI functions in the ENABLE menu | 10-3, 10-5 |
| • UTILITY menu in the set-up menu | 11-10, 11-23 |
| • Video switcher switching timing settings | 11-12 |
| • Control panel screen saver function | 11-12 |

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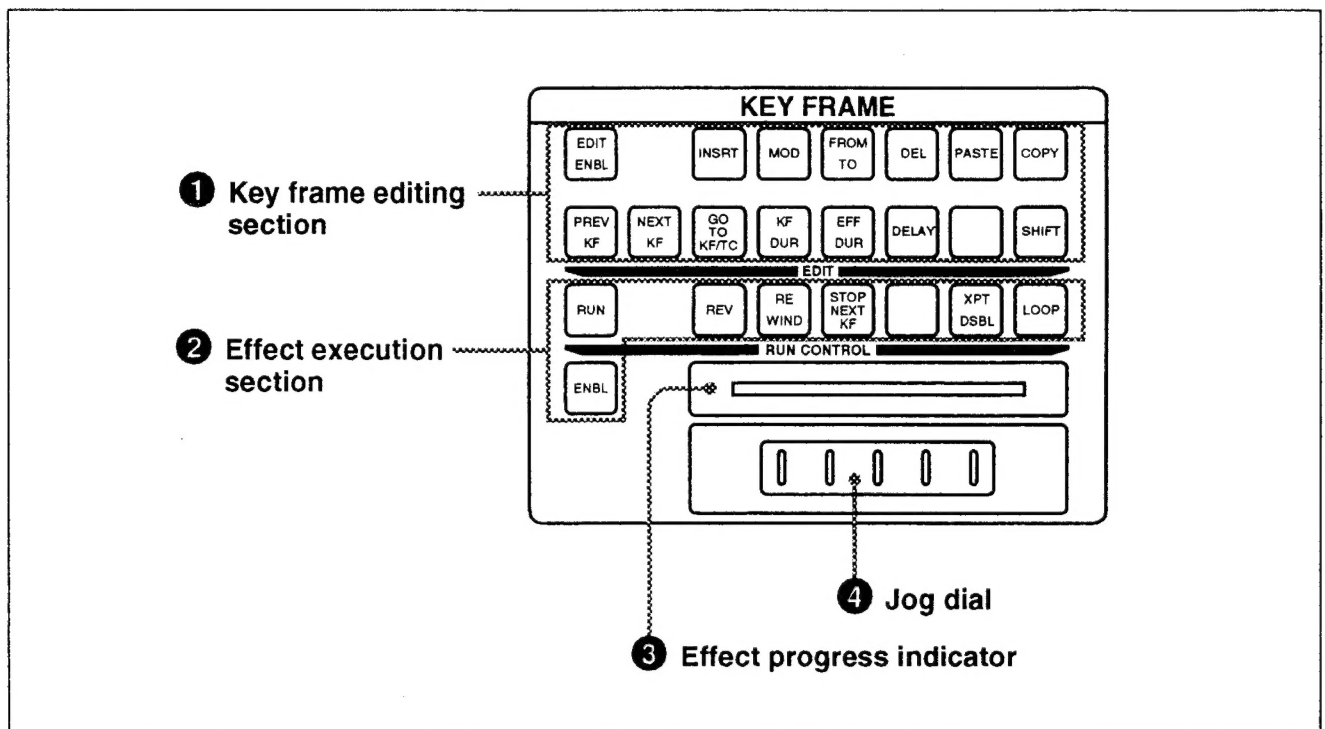
1) Excludes the following five items:
   (a) Key frame control of the DME from the BKDS-6010 switcher control panel
   (b) Operations on individual sub-registers
   (c) The effect pause function
   (d) Key frame copy function
   (e) Range specifications for key frame editing operations other than "MODIFY". (For "MODIFY", only the range from the current key frame to the last key frame can be specified.)

# Introduction

## Principal changes in Version 1.20

The following are the principal changes in Version 1.20 of the BZS-6020 software.

| Principal changes | Reference page |
|---|---|
| **Change in order of parameter adjustments for BOX, MASK, and so forth**<br>Left, right, top, bottom order is changed to top, left, right, bottom. | 4-45, 4-50, 5-14, 5-25 |
| **Change in wipe SOFT BORDER adjustment**<br>When adjusting the inner softness and outer softness, control knob 4 can be used to adjust the width. | 4-64 |
| **Changes in COLOR BKGD 1 and COLOR BKGD 2 menus**<br>The selection of MATTE1, MATTE2 and MIX with F9 is now achieved directly by F8, F9 and F10. | 4-69, 4-71 |
| **Changes in frame memory function**<br>• Non-additive mix added to paint mode.<br>• Delay mode has been deleted and still and live options added in the move mode.<br>• The link mode is added.<br>• The lock function is added. | 5-15 to 5-28 |
| **Changes in snapshot function**<br>The division into sub-registers is made finer. | 6-2, 7-2 |
| **Changes in keyer set-up**<br>In the KEY DEFAULT LEARN function, a "LEARN" for each keyer separately is now possible. | 11-19 |

# Key Frame Control Panel



**KEY FRAME**

EDIT ENBL | INSRT | MOD | FROM TO | DEL | PASTE | COPY

PREV KF | NEXT KF | GO TO KF/TC | KF DUR | EFF DUR | DELAY | SHIFT

**EDIT**

RUN | REV | RE WIND | STOP NEXT KF | XPT DSBL | LOOP

**RUN CONTROL**

ENBL

❶ Key frame editing section

❷ Effect execution section

❸ Effect progress indicator

❹ Jog dial

Key Frame Control Panel

❶ **Key frame editing section**
The following buttons provide key frame creation and editing functions and effect time settings.

**EDIT ENBL (enable) button:** Pressing this button, turning it on, enables the creation and editing of key frames (edit mode). When this button is off, other buttons in the key frame editing section are disabled. Regardless of the setting of this button, however, while an effect is being executed it is not possible to create or edit effects.

**INSRT (insert) button:** While the effect is stopped, this inserts a new key frame.
If the effect is stopped at a key frame, pressing this button while the SHIFT button is off inserts the frame after the current frame. When the SHIFT button is lit, the frame is inserted before the current frame.

**MOD (modify) button:** Writes the current image state to the current key frame. When the effect is stopped between key frames, the immediately previous key frame is rewritten.
If a range is specified with the FROM TO button, all key frames in this range are rewritten together.

**FROM TO button:** To delete or amend a number of key frames together, first press this button, and input the key frame numbers to specify a range.

**DEL (delete) button:** This deletes the current key frame. When the effect is stopped between key frames, the immediately previous key frame is deleted.
If a range is specified with the FROM TO button, all key frames in this range are deleted.

**PASTE button:** A key frame which is extracted, either by deleting or by copying, is held in an area of memory known as the "paste buffer." Pressing this button inserts the key frame from this buffer into the current position where the effect is stopped.
If the effect is stopped at a key frame, pressing this button while the SHIFT button is off inserts the frame after the current frame. When the SHIFT button is lit, the frame is inserted before the current frame.

**COPY button:** This copies the current key frame into the paste buffer. It can then be inserted using the PASTE button.

**PREV KF (previous key frame) button:** Moves back to the last key frame before the current position.

**NEXT KF (key frame) button:** Moves forward to the next key frame after the current position.

**GO TO KF/TC (key frame/time code) button:** To move to a particular key frame, press this button with the SHIFT button off. You can then enter the number of the key frame from the numeric keypad. To move to a particular time code position, press this button with the SHIFT button on. You can then enter the time code value from the numeric keypad.

**KF DUR (key frame duration) button:** Press this button to set the key frame duration (the time from the current key frame to the next key frame) using the numeric keypad.

**EFF DUR (effect duration) button:** Press this button to set the effect duration (the overall length of the effect) using the numeric keypad.

**DELAY button:** Press this button to set the delay to the start of the effect, that is, the position of the first key frame using the numeric keypad.

**SHIFT button:** Affects the operation when pressed before certain other buttons such as the INSRT, GO TO KF/TC, and PASTE buttons.

❷ **Effect execution section**
The following buttons carry out automatic execution of effects, and apply attributes and so forth.

**RUN button:** Executes the effect from the first key frame to the last key frame. If, however, a pause time point is set at some point during the effect, the execution stops when it reaches this point.
Pressing this button while the effect is being executed stops execution, and pressing it again resumes execution.

**REV (reverse) button:** When this button is lit, pressing the RUN button executes the effect in the reverse direction.

**REWIND button:** This rewinds to the first key frame of the currently recalled effect. If the REV button is on, however, this moves to the last key frame.

**STOP NEXT KF (key frame) button:** When this button is lit, pressing the RUN button executes the effect up to the next key frame.

**XPT DSBL (cross-point disable) button:**
When this button is lit, and an effect is executed, the input signal selection state is maintained unchanged.

**LOOP button:** When this button is lit, and an effect is executed, the execution loops around from the last key frame to the first key frame, and repeats the effect indefinitely.

**ENBL (enable) button:** This button enables and disables the jog dial ❹.

### ❸ Effect progress indicator
The lit portion of the indicator shows the state of progress of the effect.

### ❹ Jog dial
Use this for manual execution of an effect. Turning the jog dial clockwise moves forward through the effect, and turning it counterclockwise moves in the reverse direction.

The speed of effect execution when controlled by the jog dial can be set to a number of different levels using a menu operation.

When the ENBL button is off, the jog dial is disabled.

## Menu screen organization

This section describes the principal parts of the menu screen. Reverse video is used everywhere on the screen to indicate a currently selected item or value.

**Items:** These are the items for which the current menu screen provides settings. The menu display and function key indications change when you select a different item.
When you access a menu, it appears in the same state as the last time it was exited. When a menu is displayed for the first time after powering on, the top item is selected.
In the figure, the "EDGE" item is selected; various edge settings and function key indications relating to edge settings are displayed.

**Setting display:** This shows current values of settings. In particular, it shows more detailed information for the selected item.
The figure shows, for example, that the edge type selected is "SHADOW", and the "SOFT EDGE" setting is enabled.

**Parameter group names:** The parameters are grouped together according to the functions represented by function key indications, and these groups are listed here. The currently selected group is indicated in reverse video.
In the example shown, the "SHADOW" group is selected.

**Parameter graphics:** These indications show graphically the current settings of the parameters controlled by the four knobs. In the example, three parameters for the "SHADOW" setting are shown. There are in total, however, six parameters in this group, and the ones not currently shown are indicated (as "[Lum]" for example) on the right.

**Function key indications:** These indicate the current effect of pressing each of the function keys F1 through F10.
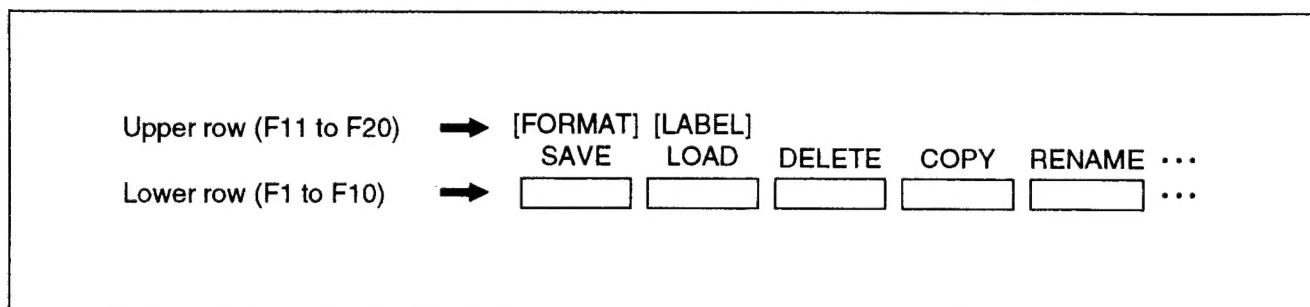
## Selecting an item

Press the item selection button (1 through 5) corresponding to the required item.
The menu display and function key indications change, and it is now possible to make settings related to the item.

# Basic Menu Operations

## Selecting an operation with the function keys

Press a function key as required in order to select an operation. In the example shown on page 3-4 there is only one row of function key indications, but in some menus there may also be an upper row, as shown in the following figure.

Upper row (F11 to F20) ➡ [FORMAT] [LABEL]
SAVE     LOAD     DELETE     COPY     RENAME ···

Lower row (F1 to F10) ➡ ☐ ☐ ☐ ☐ ☐ ···

Two rows of function key indications

To get the effect of function keys 11 through 20, press the SHIFT button to interchange the upper and lower rows of function key indications, then press the corresponding function key F1 through F10.

Pressing the SHIFT button toggles between the normal function key operations (F1 through F10) and the shifted operations (F11 through F20).

## Returning to the previous menu

To return to the menu displayed previous to the current menu, press the EXIT button. Within the SETUP menu, however, although it is possible to exit from a submenu to the parent menu, it is not possible to return to the menu displayed before the SETUP menu itself was displayed.

## Setting parameters

Use either of the following methods to set one of the currently displayed parameters:
- Turn the control knob (1 through 4) corresponding to the parameter.
- Press the KEY PAD button corresponding to the parameter, then enter the new value on the numeric keypad.
  When there is more than one parameter group name displayed, press F9 (ADJUST SELECT) to display the parameters in the other group. When there are five or more parameters in one group, press F10 (ADJUST MORE) to display more parameters.

## Returning an entered parameter to its previous value

To return an entered parameter to its previous value after entering a value from the numeric keypad, press the LAST X button in the numeric keypad section.

## Copying parameters

It is possible to copy a current parameter setting to the numeric keypad display, and then set other parameters to the same value.

**1** Press the KEY PAD button corresponding to the parameter to be copied.

**2** Press the STORE/LEARN button in the numeric keypad section.

The current parameter value appears in the numeric keypad display.

**3** Change the menu display to show the destination parameter for the copy, and press the KEY PAD button corresponding to that parameter.

The numeric keypad display does not change.

**4** Press the ENTER button.

This copies the value shown in the numeric keypad display to the destination parameter selected in step **3**.

## Moving the cursor

For wipe pattern selection, and setup operations, a cursor also appears on the screen.  Press the cursor keys ( ↑ ↓ ← → ) to move the cursor.

## Assigning a name to a register, file or input signal

In the procedure for assigning a name to a register (page 7-8), assigning a name to a file (page 8-9), or assigning a name to an input signal (page 11-5), the character input screen shown below appears. Use the corresponding buttons in the shot box block and numeric keypad block to input the characters.



Character input screen

Use the following procedure to input a name. The procedure before and after this step is described in the relevant section.

**1** Press the buttons corresponding to the desired characters in sequence, to a maximum of eight characters.
- To delete the last character entered, press F8 (BACK SPACE).
- To delete all the characters so far entered, press F7 (CLEAR).

The CLR button and BS button in the shot box block, and the CLR button in the numeric keypad section have the same effects as the F7 and F8 buttons.

**2** Press F10 (ENTER) or the ENT button in the numeric keypad section.
This confirms the sequence of characters entered.

# Status Displays

The menu screen also provides status displays for the two M/E blocks, video output and other functions.

## Names of status displays

The following are the names of the status displays.

**M/E-1 STATUS:** Shows the key, wipe, and transition status for M/E-1 block.
**M/E-2 STATUS:** Shows the key, wipe, and transition status for M/E-2 block.
**OTHERS STATUS:** Shows the status of the downstream keyer, chroma key, color backgrounds, and various enabled or disabled functions.
**SYSTEM STATUS:** Shows the status of the video outputs from M/E-1 and -2 blocks and the downstream keyer.

## Status display operations

The following are the operations required to display the various status displays.

**1** Press the STAT button in the TOP MENU section on the control panel.

This displays the status display last selected.

**2** Press one of function keys F1 through F4 to change the status display shown.
- F1 (M/E-1): M/E-1 STATUS display
- F2 (M/E-2): M/E-2 STATUS display
- F3 (OTHERS): OTHERS STATUS display
- F4 (SYSTEM): SYSTEM STATUS display

This displays the status display selected.

## Executing a manual transition with the fader lever

To carry out a manual transition, you can control the progress of the transition directly, using the fader lever.

- To complete the transition, move the lever from one end of its range to the other.
- To pause the transition, simply stop moving the lever.
- To resume the transition, start moving the lever again.

## Combining auto and manual transition control

You can use either of the following techniques to combine manual and auto transition control.

### Using the fader lever during an auto transition

After starting an auto transition by pressing the AUTO TRANS button, if you move the fader lever to the position corresponding to the current transition state, the auto transition control is released, the AUTO TRANS button goes off, and from now on the fader lever controls the transition.

### Switching from manual to auto transition control

- If you press the CUT button while using the fader lever to control a transition, the transition state reverses.
- If you press the AUTO TRANS button while using the fader lever to control a transition, auto transition control starts from the transition state represented by the current fader lever position. When, therefore, 100 frames is set as the value, and the fader lever is at a position corresponding to 25 frames elapsed, the remaining 75 frames of the transition are executed as an auto transition.

## Non-sync state

If you start a manual transition with the fader lever, then switch to auto transition, the position of the fader lever no longer agrees with the state of the transition. This is termed the non-sync state, and in this state the transition progress indicator appears as shown below, with the two LEDs at both ends only lighted.

In the non-sync state, moving the fader lever has no effect on the transition. To use the fader lever again, first move it to either end of its range. This releases the non-sync state, and all LEDs in the transition progress indicator go off.

Even in the non-sync state, you can press the AUTO TRANS button to carry out an auto transition. In this case, the indicator shows the progress of the transition as usual, then when the transition completes, returns to the non-sync indication.



Two LEDs light at each end of the indicator
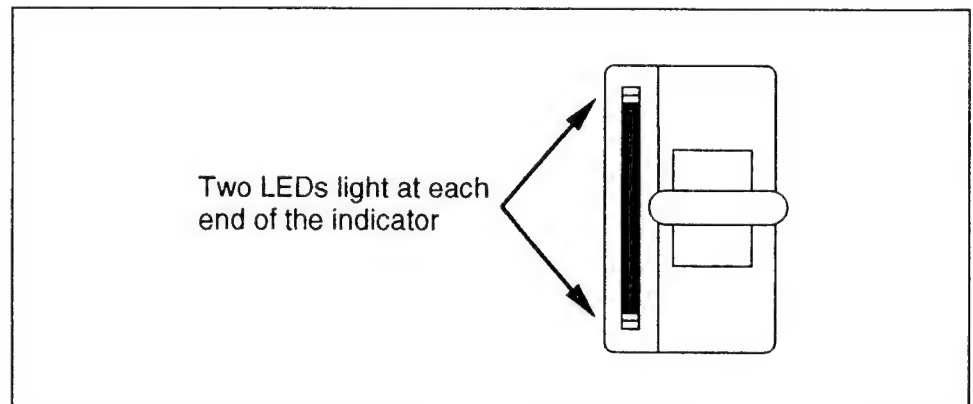
Non-sync state

## Modifications to keys

There are a number of variables you can adjust to vary a key effect.

**Inverting the key source:**   This allows a signal comprising black letters on a white background, for example, to be used as a key source to insert the letters.

**Key priority:**  This allows you to determine which of two keys being inserted is on top (i.e. takes priority over the other key). This setting is not available on the downstream keyer, since it inserts a single key.

**Edge selection:**  It is possible to modify the edge of the key in several ways, providing variations on the normal plain edge, as illustrated below.
Edge modification on the M/E-1 keyer or M/E-2 keyer requires the optional BKDS-6071 key border generator board to be fitted.  These functions are provided as standard on the downstream keyer.
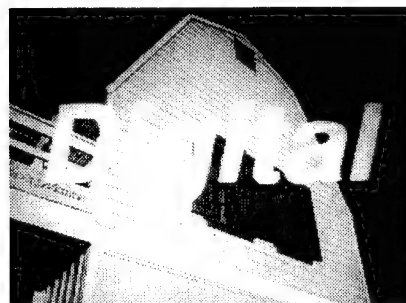
Normal unmodified edge                                Border

Shadow                                          Outline

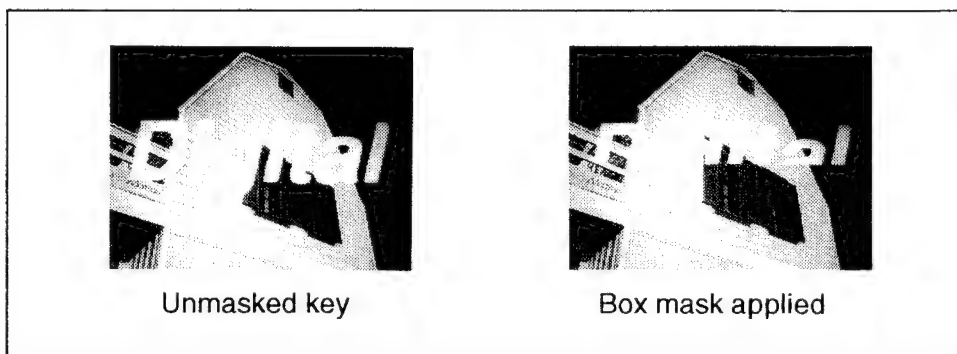**Key masking:** You can apply a mask to restrict the area to which the key applies, whether to obtain a special effect, or to "clean up" a key source signal. The mask source can be a rectangular box, a wipe pattern, or any external signal selected on a mask bus.



| Unmasked key | Box mask applied |

## Key memory

The term "key memory" refers to a function which automatically saves the set of parameters (Clip, Gain and Density, or Size, Softness and Density) for each input signal used as a key source, so that when the same signal is next used as a source, these settings are automatically recalled. This function saves independent sets of values for each combination of key source, keyer, and key type. It is possible to enable or disable the key memory function in the SETUP menu *(see page 11-19)*

## Saving and recalling default values of parameters

It is possible to save default values for the set of parameters (Clip, Gain and Density, or Size, Softness and Density) for each combination of the signal used as key source, keyer, and key type.

This saving is carried out in the SETUP menu *(see page 11-19)*. To recall the default values saved, display the menu for the keyer to be used (the M/E-1 KEY 1 menu, for example), select the key source, and hold down the function key corresponding to the required key type.

## Selecting the key source and key fill

Use the following procedure to select the key source and key fill signals.

In the case of the downstream keyer, the key source and key fill signals are allocated together to each of the key signal selection buttons, so cannot be selected independently.

**1** In the M/E-1 KEY 1 menu, select item 2 (FILL SOURCE).

The function key indications change to show the KEY FILL and KEY SOURCE settings.

**2** Press F1 or F2 to select the type of signal used for key fill.
- F1 (FILL BUS): Use the video selected on the key fill bus for this keyer.
- F2 (MATTE): Use a matte generated internally by the switcher.

**3** Press one of F3 through F5 to select the type of signal used for key source.
- F3 (FILL BUS):  Use the signal selected on this keyer's key fill bus for the key source.  This selection switches the key source bus to the same signal as the key fill bus, and it is no longer possible to make a key source bus selection with the cross-point buttons.
- F4 (AUTO SELECT):  Use the key source signal allocated to this key fill signal in the SETUP menu.  The default is to be the same as the key fill signal.  This selection also disables key source bus selection with the cross-point buttons.
- F5 (SOURCE BUS):  Use the video signal selected on this keyer's key source bus.

**4** If necessary, make the key source and key fill signal selections using the cross-point buttons.

*For details of how to select the signals, see page 4-6.*

**5** If you selected a matte signal for key fill, adjust the parameters to the required values.

# Keys

## Modifying the key edge

Use the following procedure to modify the key edge, adding a border for example.

**1** In the M/E-1 KEY 1 menu, select item 3 (EDGE).

The function key indications change to show the EDGE TYPE settings.

**2** Press one of F1 through F5 to select the edge type.
- F1 (NORMAL): unmodified edge
- F2 (BORDER)
- F3 (DROP BORDER)
- F4 (SHADOW)
- F5 (OUTLINE)

*For examples of the edge effects see the illustration on page 4-29.*

The parameter settings for the selected edge type appear.

**3** Adjust the parameter settings as necessary.
- Note that the range of values for the width setting of a drop border or shadow is different in the 4H and 8H modes. This setting is made in a SETUP menu *(see page 11-19)*.
- The values for the position (0 to 8 or 1 to 8) are different for borders as opposed to drop borders or shadows. See the illustrations on the following two pages.

**4** To soften the key edge, press F6 (SOFT EDGE), turning in on.

> **Note**
>
> If the edge type has drop border or shadow selected, then when the 8H mode is selected it is not possible to soften the key edge.

The parameter setting for the degree of softness appears.

**5** Turn knob 1 to adjust the degree of edge softness.

## Masking

Use the following procedure to apply a mask to a key effect.

Note

It is not possible to apply a mask to a pattern key with border or outline edge modification.

**1** In the M/E-1 KEY 1 menu, select item 4 (MASK).

The function key indications change to show the mask settings.

**2** Select the required mask type.
- F1 (OFF): no mask
- F2 (KEY MASK): key masking
- F3 (BKGD MASK): background masking

**3** Press a function key to select the required mask source.
- F4 (BOX): rectangular mask generated internally by the keyer
- F5 (MASK BUS): the signal on the mask bus for this mix/effects bus (M/E-1 in this example; otherwise the M/E-2 or DSK mask bus as appropriate)
- F6 (M/E-1 WIPE): wipe pattern from the M/E-1 wipe generator
- F7 (M/E-2 WIPE): wipe pattern from the M/E-2 wipe generator

The parameter settings for the selected mask source appear.

*(Continued)*

**4** If you selected any of F5 through F7 in the previous step, make the following settings as necessary.

- If you selected F6 (M/E-1 WIPE) or F7 (M/E-2 WIPE), make the wipe pattern selection and modifier settings in the wipe menu, then return to the M/E-1 KEY 1 menu.

  *For details of the wipe menus, see page 4-61.*

  You can make any of the modifier settings except DIRECTION and EDGE.

- If you selected F5 (MASK BUS), use the auxiliary bus block to select the mask signal.

  *For details of how to select the signals, see page 4-6.*

**5** Adjust the parameters as necessary.

## Clearing all key modifiers

To clear the key invert, key edge and key mask settings simultaneously, hold down the corresponding button (KEY 1, KEY 2, or DSK) in the top menu section, and press the CLR/ AUTO TRANS button in the numeric keypad block.

Settings in the M/E-1 KEY 1, M/E-1 KEY 2, M/E-2 KEY 1 and M/E-2 KEY 2 menus

| Item | Function keys | | | Parameter setting |
|------|------|------|------|------|
| 4: MASK | MASK TYPE | F1: OFF | No mask. | — |
| | | F2: KEY MASK | Key masking. | — |
| | | F3: BKGD MASK | Background masking. | — |
| | MASK SOURCE | F4: BOX | Use rectangular mask signal generated internally by each of the M/E keyers. | 1 (Top): (0.00 to 100.00) 2 (Left): (0.00 to 100.00) 3 (Right): (0.00 to 100.00) 4 (Bottom): (0.00 to 100.00) 1 (Softness): degree of edge softness (0.00 to 100.00) |
| | | F5: MASK BUS | Use signal selected on the mask bus. (Use auxiliary bus block to select signal.) | 1 (Clip): clip level for the mask signal. (0.00 to 100.00) 2 (Softness): degree of edge softness (0.00 to 100.00) |
| | | F6: M/E-1 WIPE | Use M/E-1 wipe generator for mask. | 1 (Size): pattern size (0.00 to 100.00) 2 (Softness): degree of edge softness (0.00 to 100.00) |
| | | F7: M/E-2 WIPE | Use M/E-2 wipe generator for mask. | 1 (Size): pattern size (0.00 to 100.00) 2 (Softness): degree of edge softness (0.00 to 100.00) |
| | F8: MASK INVERT | | Enable or disable mask inversion. | — |
| | F10: ADJUST MORE | | Display next set of parameters for adjustment. | — |

# Downstream Key Menu Display and Settings

### Example DSK menu display

Pressing the DSK button in the top menu section displays the DSK menu, as shown below.
Use this example display in combination with the table on the following pages for reference when making the settings.
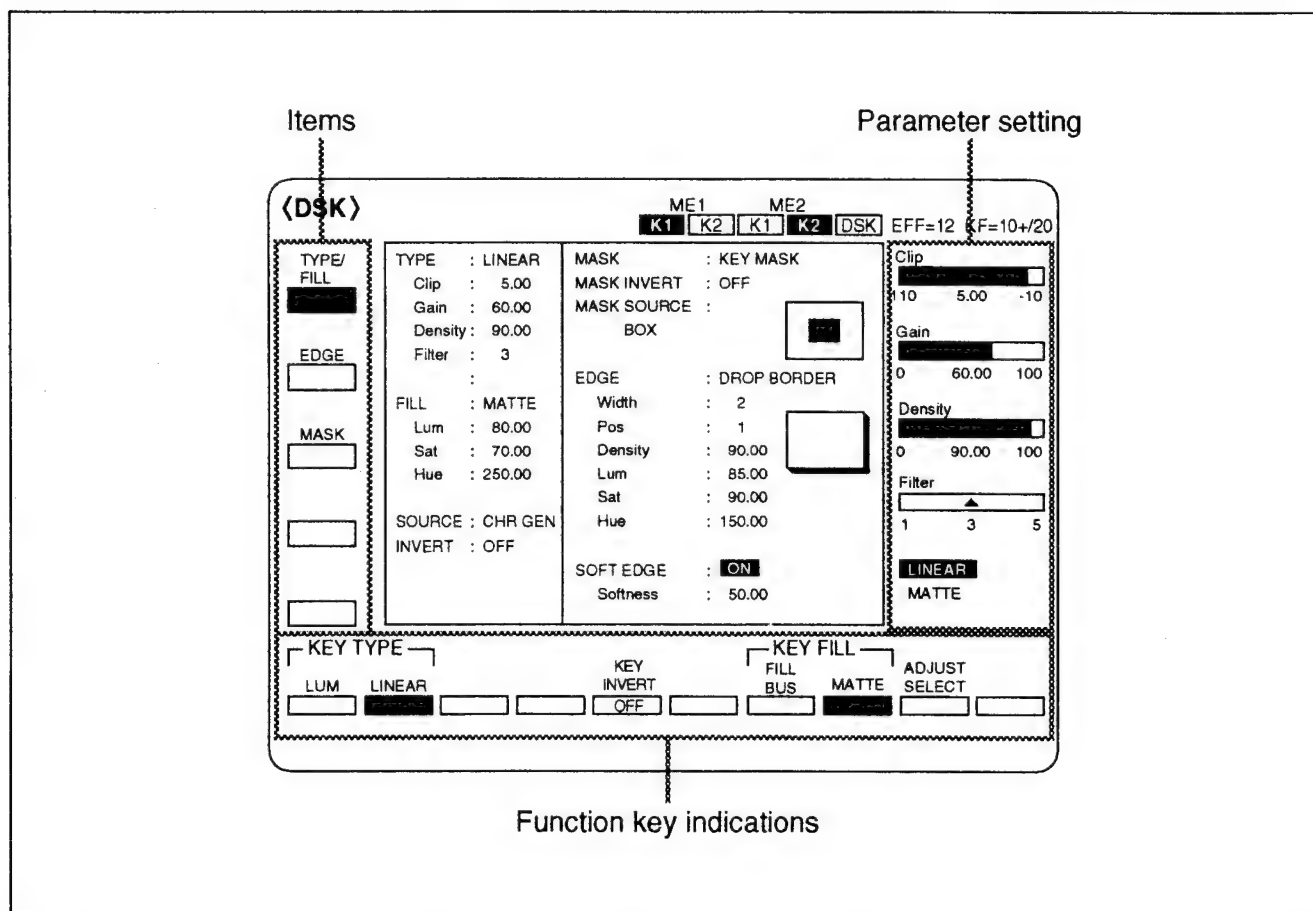


Example DSK menu display

Settings in the DSK menu

| Item | Function keys | | | Parameter setting |
|---|---|---|---|---|
| 2: EDGE | EDGE TYPE | F4: SHADOW | Apply a shadow.<br>The border width mode (4H or 8H) is selected in a SETUP menu *(page 11-19)*. | 1 (Width):<br>(4H mode: 0 to 4)<br>(8H mode: 0 to 8)<br>2 (Position):<br>(4H mode: 1 to 8)<br>(8H mode: 1 to 3)<br>*See page 4-35.*<br>3 (Density):<br>(0.00 to 100.00)<br>1 (Luminance):<br>(0.00 to 100.00)<br>2 (Saturation):<br>(0.00 to 100.00)<br>3 (Hue): (0.00 to 359.99) |
| | | F5: OUTLINE | Fill the outline only with key fill. | 1 (Width): (0 to 4H)<br>2 (Position): (0 to 8)<br>*See page 4-36.*<br>3 (Density):<br>(0.00 to 100.00) |
| | F6: SOFT EDGE | | Adjust softness of edge of key or border. | 1 (Softness):<br>(0.00 to 100.00) |
| | ADJUST | F9: SELECT | Select parameter group. | — |
| | | F10: MORE | Display next set of parameters for adjustment. | — |

*(Continued)*

# Keys

| Item | Function keys | | | | Parameter setting |
|---|---|---|---|---|---|
| 3: MASK | MASK TYPE | F1: OFF | | No mask. | — |
| | | F2: KEY MASK | | Key masking. | — |
| | | F3: BKGD MASK | | Background masking. | — |
| | MASK SOURCE | F4: BOX | | Use rectangular mask signal generated internally by the downstream keyer. | 1 (Top): (0.00 to 100.00)<br>2 (Left): (0.00 to 100.00)<br>3 (Right): (0.00 to 100.00)<br>4 (Bottom): (0.00 to 100.00)<br>1 (Softness): degree of edge softness (0.00 to 100.00) |
| | | F5: MASK BUS | | Use signal selected on the mask bus. (Use auxiliary bus block to select signal.) | 1 (Clip): clip level for the mask signal. (0.00 to 100.00)<br>2 (Softness): degree of edge softness (0.00 to 100.00) |
| | F8: MASK INVERT | | | Enable or disable mask inversion | — |
| | F10: ADJUST MORE | | | Display next set of parameters for adjustment. | — |

# Wipes

The two M/E blocks support wipes, allowing one background video to be replaced by another according to the wipe pattern selected.

This section describes the various wipe selections and settings which are possible.

## Wipe Settings

### Wipe generators

The DVS-6000/6000C has four wipe generators, which produce the video signals corresponding to the wipe patterns, and which can be set up independently.
- M/E-1 wipe generator
- M/E-2 wipe generator
- Color background 1 wipe generator
- Color background 2 wipe generator

This section discusses the M/E-1 and M/E-2 wipe generators.

*For details of the color background wipe generators, see page 4-67.*

### Wipe patterns

You can select a wipe pattern from the selection displayed in a menu. The wipe patterns also appear in the Appendix "Wipe patterns."
The direction in which a wipe proceeds is indicated by the pattern: at an intermediate stage of the transition, the white portion represents the old video, and the black portion the new video. Alternatively, arrows indicate the direction in which some wipe patterns change.

The wipe patterns may be grouped together under the headings below. Note that to use an enhanced wipe, mosaic wipe, diamond dust, or a pattern mix, requires the optional BKDS-6070 enhanced wipe generator board to be installed.

**Standard wipes:** Basic wipe patterns, using straight lines and circles to divide the old video from the new.

**Rotary wipes:** Wipes involving rotation about some center point.

**Enhanced wipes:** More complex shapes such as hearts and stars.

**Mosaic wipes:** Wipes dividing the image into a mosaic of small shapes. This includes a randomized mosaic wipe.

**Diamond dust:** An effect like a scatter of small particles. This wipe pattern is common to the M/E-1 and M/E-2 wipe generators.
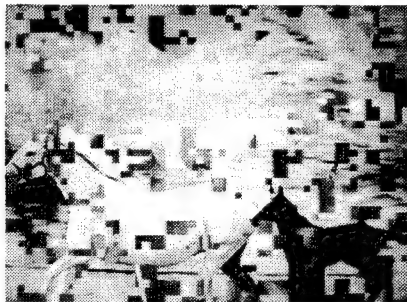


Mosaic wipe

Diamond dust

**Pattern mix:** A combination of two different wipe patterns (a main and a secondary pattern) selected from among standard, enhanced, and mosaic wipe patterns).

## Combinations of patterns and modifiers

The following table shows which modification settings can be applied to which wipe patterns.

| Pattern type | Wipe pattern number | DIREC-TION | POSI-TIONER | EDGE | ASPECT | MULTI | SPLIT | MODU-LATION | ROTA-TION |
|---|---|---|---|---|---|---|---|---|---|
| Standard wipes | 1-8 | Yes | No | Yes | No | Yes | Yes | Yes | Yes |
| | 17, 18 | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| | 9-16, 19, 20 | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| | 21-24 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Enhanced wipes[a] | 26-27 | | | | | | | | |
| Rotary wipes | 100-103, 150, 151, 516, 518, 604, 606 | Yes | No | Yes | No | Yes | No | Yes | Yes |
| | 104-107, 156, 158, 160, 162, 624, 661 | Yes | Yes | Yes | No | Yes | No | Yes | Yes |
| Mosaic wipes[a] | 200-203, 206-213, 250-257, 260-272 | Yes | No | Yes | No | No | No | No | No |
| Diamond dust[a] | 274 | | | | | | | | |

a) Requires the optional BKDS-6070 enhanced wipe generator board to be fitted.

# Basic Operations for Wipe Settings

The wipe settings are mostly carried out on the M/E-1 WIPE menu or M/E-2 WIPE menu according to the M/E block being used. The following, however, can also be carried out using the controls in the wipe control block:

- Pattern movement (POS IN button, CTR button, and wipe positioner)
- Wipe direction (NORM, NORM/REV and REV buttons)
- Wipe generator selection (M/E-1, M/E-2, COLOR BKGD 1 and COLOR BKGD 2 buttons)

*For details of the functions of these buttons, see page 2-14.*

This section describes the procedure for selecting a wipe pattern using the M/E-1 wipe generator, and applying various modifications.

## Selecting the wipe pattern

Use the following procedure to select the wipe pattern.

**1** Select the wipe generator.
In this example, press any of the following buttons:
- The WIPE button in the transition type selection section of the M/E-1 block.
- The WIPE button in the M/E-1 row of the top menu section.
- The M/E-1 button in the wipe control block.

The M/E-1 WIPE menu appears.

*For an example of the menu display see page 4-61.*

**2** Select item 1 (PATTERN).

This displays the selection display for the main pattern.

**3** If necessary, press any of F5 (PAGE 1) to F8 (PAGE 4) to display the page containing the required pattern.

**4** Use the cursor keys to select the required pattern (indicated by reverse video).

**5** Press F10 (ENTER).

This confirms the selected pattern as the "MAIN" wipe pattern.

## Selecting a wipe pattern from the numeric keypad

Use the following procedure to enter the number of the desired wipe pattern from the numeric keypad. The wipe pattern numbers are listed in Appendix "List of Wipe Patterns" (page A-2).

**1** Display the main pattern selection screen or secondary ("sub") pattern selection screen (see the next page).

The system is now ready to accept the wipe pattern number from the numeric keypad.

**Note**

If with the pattern selection screen displayed, you use the numeric keypad for some other purpose (such as entering a transition rate), in order to reenable wipe pattern number input, you must carry out one of the following operations:
- Press F2 (MAIN) to enter a main wipe pattern number.
- Press F3 (SUB) to enter a secondary ("sub") wipe pattern number.

**2** Enter the desired wipe pattern number from the numeric keypad, and press the ENTER button.

The selected pattern appears under the "MAIN" or "SUB" wipe pattern heading.

# Wipes

## Combining two wipe patterns

**1** After selecting the main pattern, press F3 (SUB), turning it to reverse video.

This displays the selection display for the secondary ("sub") pattern.

**2** Use F5 (PAGE 1), F7 (PAGE 3), F8 (PAGE 4), and cursor keys to select the required pattern (indicated by reverse video).

**3** Press F10 (ENTER).

The selected pattern appears under the "SUB" wipe pattern heading.

**4** Press F1 (MIX).

This displays the pattern mix adjustment screen.

**5** Press F1 (MIX), turning it on.

It is now possible to use the combination of the two wipe patterns as the wipe pattern.

**6** If necessary, turn control knob 1 to adjust the mix proportions.

# Wipes

## Positioning the selected pattern

Use the following procedure to position the selected pattern.

**1** In the M/E-1 WIPE menu, select item 2 (DIRECT/POS).

**2** Use one of the following methods to enable the positioning function:
- Press F5 (POS), turning it on.
- Press the POS ON button in the wipe control block, turning it on.

You can now move the pattern with respect to video space.

**3** Use one of the following methods to move the pattern to the desired position.
- Move the wipe positioner in the wipe control block.
- Turn knobs 1 and 2 to set the horizontal and vertical positions.
- To return the pattern to its default position, press the CTR button in the wipe control block.

**4** If necessary press F6 or F7 to control movement of the pattern during the wipe.
- F6 (NORMAL): The wipe pattern center is stationary throughout the transition.
- F7 (AUTO CENTER): As the wipe progresses, the wipe pattern center moves toward the center of the video space.

The POS ON button in the wipe control block lights amber when F6 is pressed, and lights green when F7 is pressed.

## Rotating the selected pattern

Use the following procedure to rotate the selected pattern.

**1** In the M/E-1 WIPE menu, select item 4 (MODIFY 2).

The function key indications change to show, among other items, the ROTATION settings.

**2** Press one of F4 through F7 to select the rotation option required.
- F4 (OFF): no rotation
- F5 (ANGLE): turning a stationary pattern through a fixed angle
- F6 (MAG): specifying an angle through which the pattern turns through the course of the transition (initial angle also specifiable)
- F7 (SPEED): specifying a fixed rotation rate

**3** Turn knobs 1 to 4 as necessary, to adjust the parameters.
If the ROTATION parameter group is not displayed, press F9: (ADJUST SELECT).

## Replicated pattern alignment

You can select from four different ways of laying out replicated patterns (the "multi" option); set the "Shift" parameter to the appropriate value (1 to 4).
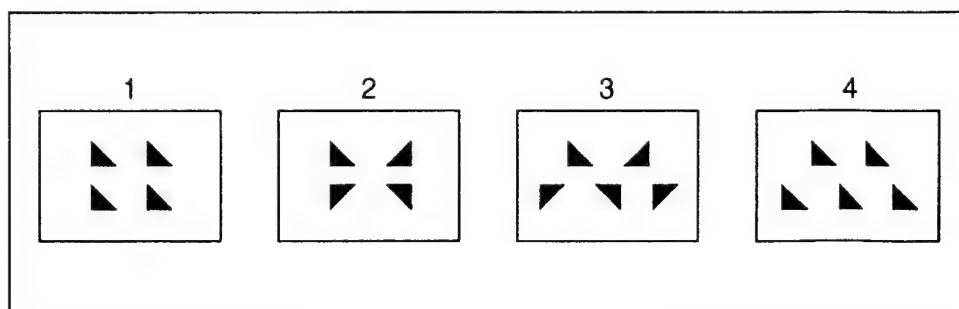


Replicated pattern alignment

## Clearing all wipe modifiers

To clear all modifiers applied to the currently selected wipe pattern, hold down the WIPE button in the top menu section, and press the CLR/AUTO TRANS button in the numeric keypad block.

## Saving and Recalling User Wipe Patterns

When you have finalized a wipe pattern, complete with its various modifications, you can store the whole setting in a user wipe button, for easy recall.

The SETUP menu *(see page 11-19)* allows you to select whether the eight user wipe buttons are common to the two M/E wipe generators and common to the two color background wipe generators, or independent.

### Saving a user wipe

Use the following procedure to save a user wipe.

**1** Select the wipe generator.

**2** Set up the wipe, including all modifications, as it is to be saved.

**3** Select item 5 (USER WIPE) in the wipe menu.

**4** Press F1 (LEARN USER), turning it on.

**5** Press one of F3 through F10, corresponding to the USER WIPE button to be used.

This saves all the current wipe settings in one USER WIPE button.

### Recalling a saved user wipe

To recall all settings as they were saved, press the corresponding function key or USER WIPE button (1 through 8).

You can undo the effect of recalling a user wipe, by pressing the LAST X button while holding down the WIPE button in the top menu section.

# Wipe Menu Display and Settings

## Example M/E-1 WIPE menu display

Pressing the WIPE button in the M/E-1 row of the top menu section displays the M/E-1 WIPE menu, as shown below.
The M/E-2 WIPE menu also shows the same or corresponding items.
Use this example display in combination with the table on the following pages for reference when making the settings for either of the mix/effects wipe generators.



Example M/E-1 WIPE menu display

# Wipes

## Settings in the M/E-1 WIPE and M/E-2 WIPE menus
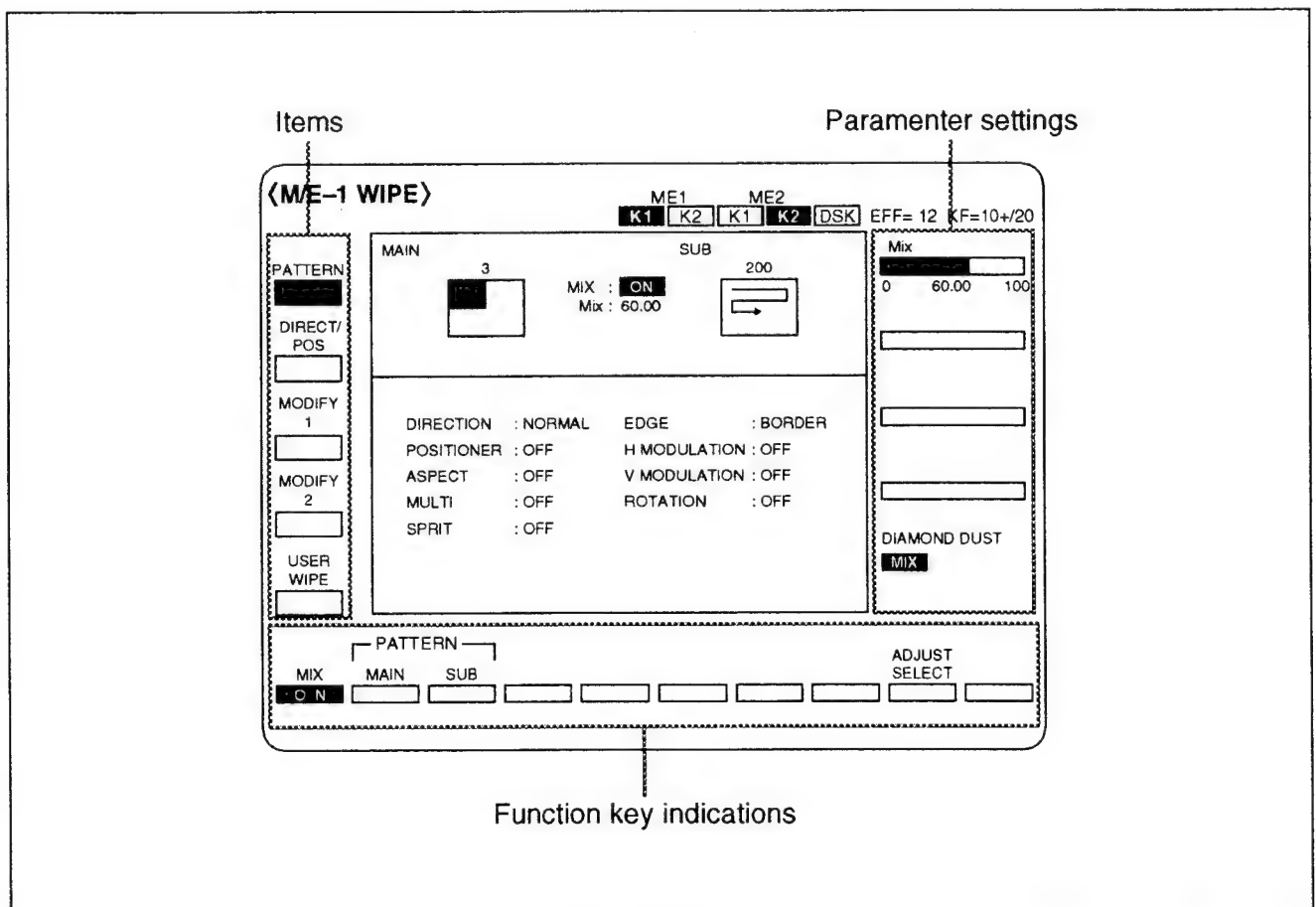
See the previous page for an example of the M/E-1 WIPE menu display.

Settings in the M/E-1 WIPE and M/E-2 WIPE menus

| Item | Function keys | | | | Parameter setting |
|---|---|---|---|---|---|
| 1: PATTERN | Initial display (main pattern selection) | F1: MIX | | Display the pattern mix adjustment screen[a] | — |
| | | PATTERN | F2: MAIN | Remain at display of main pattern selection | — |
| | | | F3: SUB | Display "sub" pattern selection[a] | — |
| | | F5: PAGE 1 | | Display page 1 of the main patterns. | — |
| | | F6: PAGE 2 | | Display page 2 of the main patterns. | — |
| | | F7: PAGE 3 | | Display page 3 of the main patterns. | — |
| | | F8: PAGE 4 | | Display page 4 of the main patterns. | When diamond dust is selected, press F1, and adjust the parameters in the pattern mix adjustment screen. |
| | | F10: ENTER | | Confirm pattern selection | — |
| | "Sub" pattern selec-tlion [a] | F1: MIX | | Display the pattern mix adjustment screen. | — |
| | | PATTERN | F2: MAIN | Display main pattern selection. | — |
| | | | F3: SUB | Remain at display of "sub" pattern selection. | — |
| | | F5: PAGE 1 | | Display page 1 of the "sub" patterns. | — |
| | | F7: PAGE 3 | | Display page 3 of the "sub" patterns. | — |
| | | F8: PAGE 4 | | Display page 4 of the "sub" patterns. | — |

a) Requires the optional BKDS-6070 enhanced wipe generator board to be installed.

Settings in the M/E-1 WIPE and M/E-2 WIPE menus

| Item | Function keys | | | Parameter setting |
|---|---|---|---|---|
| 1: PATTERN | "Sub" pattern selec-tlion [a] | F10: ENTER | | Confirm pattern selection. | — |
| | Pattern mix adjust-ment display [a] | F1: MIX | | Combine two wipe patterns (main and sub). | 1 (Mix): ratio of the "sub" pattern signal level to the main pattern signal level (0.00 to 100.00) |
| | | PATTERN | F2: MAIN | Graphic selection of main pattern | — |
| | | | F3: SUB | Graphic selection of "sub" pattern [a] | — |
| | | F9: ADJUST SELECT | | Select parameter group. | When diamond dust is selected, the following settings become necessary: 2 (H Size): horizontal size (0.00 to 100.00) 3 (V Size): vertical size (0.00 to 100.00) 4 (Flash Rate): (0.00 to 100.00) |
| 2: DIRECT/POS | DIRECTION | F1: NORMAL | | Forward wipe, from black to white | — |
| | | F2: NORMAL/ REVERSE | | Alternately forward and reverse | — |
| | | F3: REVERSE | | Reverse wipe, from white to black. | — |
| | POSITIONER | F5: POS | | Position pattern, using positioner, knobs or numeric keypad. | 1 (H Position): horizontal position (−50.00 to +50.00) 2 (V Position): vertical position (−50.00 to +50.00) |

a) Requires the optional BKDS-6070 enhanced wipe generator board to be installed.

# Wipes

Settings in the M/E-1 WIPE and M/E-2 WIPE menus (Continued)

| Item | Function keys | | | Parameter setting |
|------|-----|-----|-----|-----|
| 2: DIRECT/POS | POSI-TIONER | F6: NORMAL | Center of pattern is fixed throughout transition. | — |
| | | F7: AUTO CENTER | Center of pattern moves toward center of video space as wipe progresses. | — |
| 3: MODIFY 1 | EDGE TYPE | F1: OFF | Unmodified edge | — |
| | | F2: BORDER | Apply a border. | 1 (Luminance): (0.00 to 100.00) <br> 2 (Saturation): (0.00 to 100.00) <br> 3 (Hue): (0.00 to 359.99) <br> 4 (Width): (0.00 to 100.00) |
| | | F3: SOFT | Apply soft edge. | 1 (Softness): (0.00 to 100.00) |
| | | F4: SOFT BORDER | Apply a soft border. | 1 (Luminance): (0.00 to 100.00) <br> 2 (Saturation): (0.00 to 100.00) <br> 3 (Hue): (0.00 to 359.99) <br> 4 (Width): (0.00 to 100.00) <br> 1 (Inner Softness): (0.00 to 100.00) <br> 2 (Outer Softness): (0.00 to 100.00) <br> 4 (Width): (0.00 to 100.00) |
| | F5: ASPECT | | Adjust aspect ratio of pattern. | 1 (Aspect): a lager number stretches the pattern in horizontal direction and a smaller number, in vertical direction (0.00 to 100.00) |

## Combining matte 1 and matte 2

**1** In the COLOR BKGD 1 menu, with the MATTE item selected, press F1 (MIX), turning it on.

This displays the currently selected pattern.

**2** Press F2 (PATTERN).

The pattern selection display appears.

**3** Use the cursor keys to select the required pattern (indicated by reverse video).

**4** Press F10 (ENTER).

This produces a combination of the two mattes using the selected pattern.

**5** Press F1 (MATTE).

This returns to the initial display.

**6** As necessary, adjust the following items using F8 to F10:
- F8 (MATTE 1): Matte 1 color selection
- F9 (MATTE 2): Matte 2 color selection
- F10 (MIX): The pattern size (Size) and softness of the boundary of matte 1 and matte 2 (Mix).

**7** If necessary, select item 2 (MODIFY) to apply a modification to the pattern.

# Color Bakgrounds

## Selecting a pattern from the numeric keypad

You can also select the pattern for color background combination from the numeric keypad, in the same way as for a wipe pattern selection.

The pattern numbers are listed in Appendix "List of Wipe Patterns" (page A-2).

**1** Display the pattern selection screen.

The system is now ready to accept the pattern number from the numeric keypad.

**Note**

If with the pattern selection screen displayed, you use the numeric keypad for some other purpose (such as entering a transition rate), in order to reenable pattern number input, it is necessary to press F2 (PATTERN) once again before entering the pattern number.

**2** Enter the desired pattern number from the numeric keypad, and press the ENTER button.

The two mattes are now combined using the selected pattern.

## Clearing all modifiers

To clear all modifiers applied to the pattern used for color background combination, hold down the COLOR BKGD 1 or COLOR BKGD 2 button in the top menu section, and press the CLR/AUTO TRANS button in the numeric keypad block.

# Color Background Menu Display and Settings

### Example COLOR BKGD 1 menu display

Pressing the COLOR BKGD 1 button in the top menu section displays the COLOR BKGD 1 menu, as shown below. Note that the COLOR BKGD 2 menu contains the same items as in the COLOR BKGD 1 menu.

Use this example display in combination with the table on the following pages for reference when making the settings for either of the color background generators.
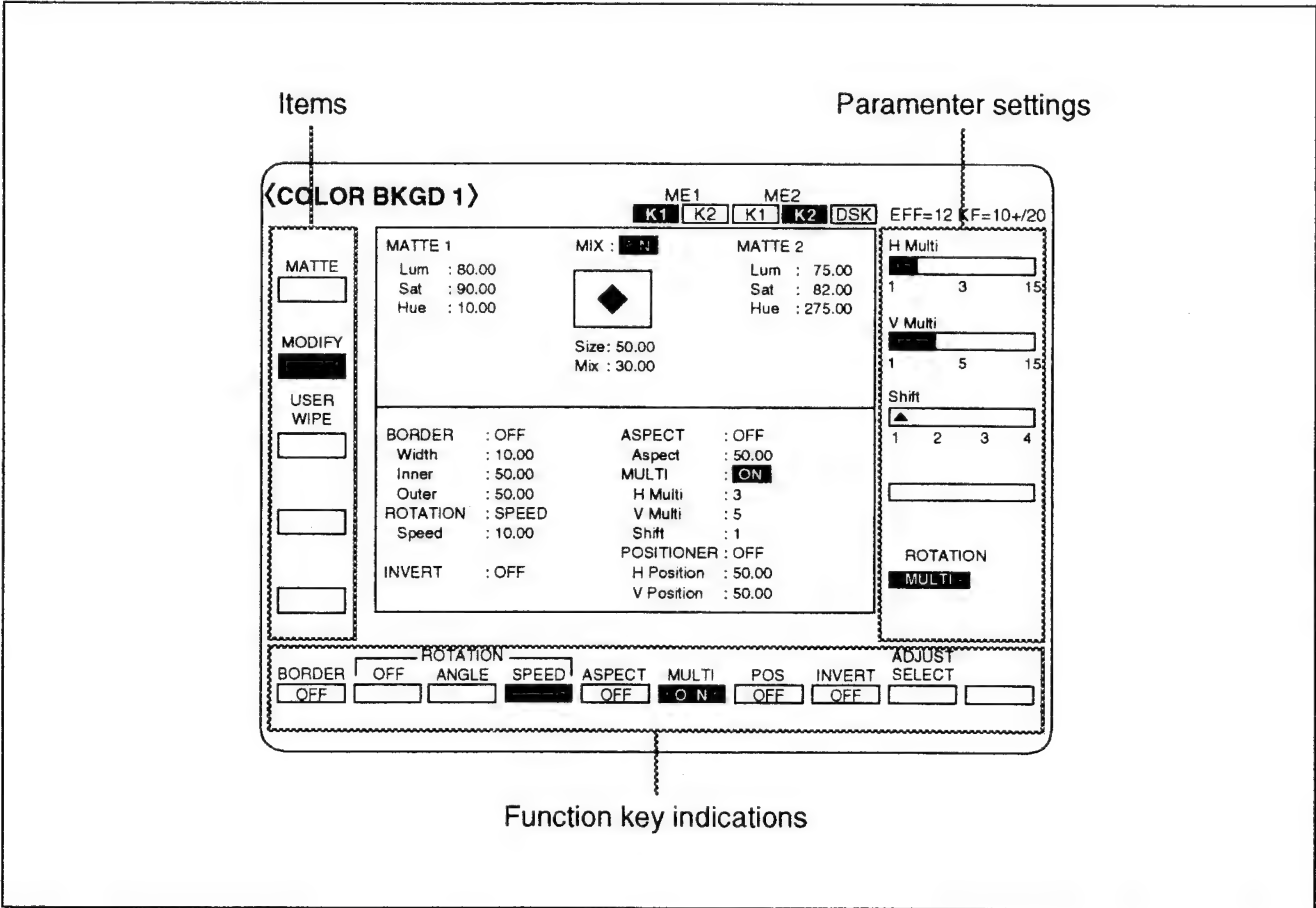


Example COLOR BKGD 1 menu display

## Settings in the COLOR BKGD 1 and COLOR BKGD 2 menus

See the previous page for an example of the COLOR BKGD 1 menu display.

Settings in the COLOR BKGD 1 and COLOR BKGD 2 menus

| Item | Function keys | | | Parameter setting |
|---|---|---|---|---|
| 1: MATTE | Initial display | F1: MIX a) | Enable or disable the mixing of matte 1 and matte 2. When ON, the two mattes are combined using the wipe pattern, and the MATTE 2 and MIX parameters can be adjusted. | [MATTE 1]<br>  1 (Luminance): (0.00 to 100.00)<br>  2 (Saturation): (0.00 to 100.00)<br>  3 (Hue): (0.00 to 359.99)<br>[MATTE 2]<br>  1 (Luminance): (0.00 to 100.00)<br>  2 (Saturation): (0.00 to 100.00)<br>  3 (Hue): (0.00 to 359.99)<br>[MIX]<br>When BORDER is set to OFF:<br>  1 (Size): Pattern size (0.00 to 100.00)<br>  2 (Mix): Boundary softness (0.00 to 100.00)<br>When BORDER is set to ON:<br>  1 (Size): Pattern size (0.00 to 100.00)<br>  2 (Inner): Inner softness (0.00 to 100.00)<br>  3 (Outer): Outer softness (0.00 to 100.00) |
| | | F2: PATTERN | Graphic selection of pattern | — |
| | | ADJUST SELECT | F8: MATTE 1 | Select matte 1 parameters | — |
| | | | F9: MATTE 2 | Select matte 2 parameters | — |
| | | | F10: MIX | Select mix parameters | — |

a) Requires the optional BKDS-6072 background color mix generator board to be installed.

*(Continued)*

# Color Backgrounds

Settings in the COLOR BKGD 1 and COLOR BKGD 2 menus (Continued)

| Item | Function keys | | | Parameter setting |
|---|---|---|---|---|
| 2:<br>MODIFY[a] | F1: BORDER | | Apply a border. | 1 (Width):<br>(0.00 to 100.00)<br>2 (Inner): Inner softness<br>(0.00 to 100.00)<br>3 (Outer): Outer<br>softness (0.00 to<br>100.00) |
| | ROTA-<br>TION | F2: OFF | No pattern rotation | — |
| | | F3: ANGLE | Turn stationary pattern through a fixed angle. | 1 (Angle): positive for<br>clockwise rotation;<br>maximum 1 turn<br>(−50.00 to +50.00) |
| | | F4: SPEED | Specify fixed rotation rate. | 1 (Speed): positive for<br>clockwise rotation<br>(−50.00 to +50.00) |
| | F5: ASPECT | | Adjust aspect ratio of pattern. | 1 (ASPECT): a larger<br>number makes the<br>pattern wider<br>(0.00 to 100.00) |
| | F6: MULTI | | Make replicated pattern. | 1 (H Multi): number of<br>horizontal replications<br>(1 to 15)<br>2 (V Multi): number of<br>vertical replications<br>(1 to 15)<br>3 (Shift): replication<br>layout (1 to 4)<br>*(see page 4-59)* |
| | F7: POS | | Position pattern, using positioner, knobs or numeric keypad. | 1 (H Position): horizontal<br>position (−50.00 to<br>+50.00)<br>2 (V Position): vertical<br>position (−50.00 to<br>+50.00) |
| | F8: INVERT | | Invert pattern. | — |
| | F9: ADJUST SELECT | | Select parameter group. | — |

a) Requires the optional BKDS-6072 background color mix generator board to be installed.

Settings in the CHR KEY menu

| Item | Function keys | | | Parameter setting |
|---|---|---|---|---|
| 2: ADJUST | F4: WINDOW | | Toggle the function to adjust the range of hue and saturation to be detected as key color on and off. | 1 (Crop): saturation range (0.00 to 100.00)<br>2 (Angle): hue range (0.00 to 100.00) |
| | AUTO CHR KEY | F6: SAMPLE MARK | Display a frame to select keying color for the auto chroma key function. | 1 (H Position): horizontal position (−50.00 to +50.00)<br>2 (V Position): vertical position (−50.00 to +50.00)<br>3 (S{ze): (0.00 to 100.00) |
| | | F7: AUTO START | Start auto chroma key adjustment. | — |
| | F9: ADJUST SELECT | | Select parameter group. | — |
| 3: VIDEO CORRECT | D2 systems | F1: FRGD | Toggle the foreground video signal adjustment function on and off. | 1 (Video Gain): (0.00 to 200.00)<br>2 (Y Gain): (0.00 to 200.00)<br>3 (C Gain): (0.00 to 200.00)<br>4 (Hue Delay): (−180.00 to +180.00) |
| | | F2: BKGD | Toggle the background video signal adjustment function on and off. This item does not appear for RGB chroma keying. | 1 (Video Gain): (0.00 to 200.00)<br>2 (Y Gain): (0.00 to 200.00)<br>3 (C Gain): (0.00 to 200.00)<br>4 (Hue Delay): (−180.00 to +180.00) |
| | | F3: RESOLUTION | Toggle the resolution adjustment function on and off. | 1 (Y Reso): (−100.00 to +100.00)<br>2 (C Reso): (−100.00 to +100.00) |
| | | F9: ADJUST SELECT | Select paramenter group. | — |

*(Continued)*

# Chroma Key

Settings in the CHR KEY menu (Continued)

| Item | Function keys | | | Parameter setting |
|------|---------------|---|---|-------------------|
| 3: VIDEO CORRECT | D1 systems | F1: FRGD | Toggle the foreground video signal adjustment function on and off. | 1 (Video Gain): (0.00 to 200.00) <br> 2 (Y Gain): (0.00 to 200.00) <br> 3 (C Gain): (0.00 to 200.00) <br> 4 (Hue Delay): (−180.00 to +180.00) |
| 4: MASK | MASK TYPE | F1: OFF | No masking. | — |
| | | F2: KEY MASK | Mask the foreground. | — |
| | | F3: BKGD MASK | Mask the background. | — |
| | MASK SOURCE | F4: BOX | Use rectangular frame mask supplied by chroma keyer. | 1 (Top): (0.00 to 100.00) <br> 2 (Left): (0.00 to 100.00) <br> 3 (Right): (0.00 to 100.00) <br> 4 (Bottom): (0.00 to 100.00) <br> 1 (Softness): degree of edge softness (0.00 to 100.00) |
| | | F5: FRAME MEM 1 | Use frame memory 1 as mask source. *For details of frame memory, see page 5-15.* | 1 (Clip): reference level for producing the mask signal (0.00 to 100.00) <br> 2 (Softness): degree of edge softness (0.00 to 100.00) |
| | | F6: FRAME MEM 2 | Use frame memory 2 as mask source. | 1 (Clip): reference level for producing the mask signal (0.00 to 100.00) <br> 2 (Softness): degree of edge softness (0.00 to 100.00) |
| | F7: MASK INVERT | | Toggle mask inversion on and off (i.e. "on" means inverted.) | — |
| | F10: ADJUST MORE | | Display next set of parameters for adjustment. | — |

## Paint mode

In this mode you can move the keyed-in input video, leaving a trail, and writing the result to memory.
In this case, use a wipe pattern as the key source.
It is not possible to use this mode concurrently with the manual mode.



— Input video
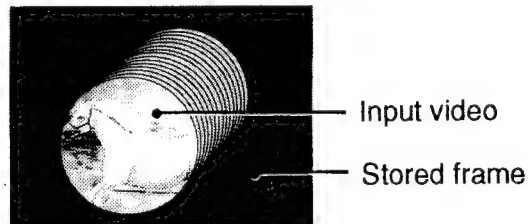
— Stored frame

## Move mode

In this mode, you can move the whole stored frame with respect to the video space. You can select whether to move a frame frozen using the manual mode or paint mode ("STILL"), or a moving input video frame ("LIVE"). When you select a moving input video frame, it is also possible to use keying on the input video so as to move a portion of the frame only.



— Stored frame (still frame or live)
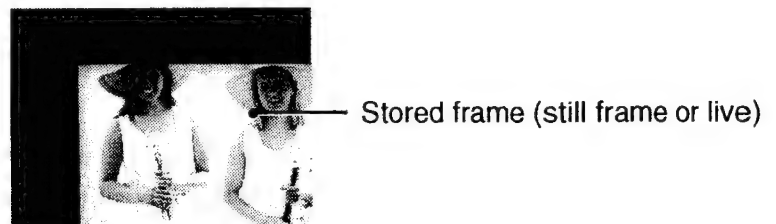
## Link mode

In this mode, the actions of frame memory 2 can be linked to those of frame memory 1, so that the two move in the same way.

## Lock function

To prevent inadvertent overwriting of a frame written to frame memory, the lock function inhibits writing to frame memory.

# Assigning the Output Signal to a Cross-Point Button Number

Before you can see the output of frame memory on a monitor, it is necessary to assign the output signals (FRAME MEMORY 1 and FRAME MEMORY 2) to cross-point button numbers. This assignment is carried out from a SETUP menu *(see page 11-4)*.

Once you have assigned the corresponding signal to a cross-point button number, you can view the frame memory signals on a monitor by punching them up on either of the M/E blocks or the DSK block. Using the frame memory menu, it is possible to select whether the signal viewed is the frame in memory (MEM) or the input video signal to the frame memory (IN). This setting is described in the procedure below.

# Basic Frame Memory Operations

Frame memory operations are carried out from the FRAME MEMORY 1 menu or FRAME MEMORY 2 menu depending on the frame memory to which they apply.

The procedure described here carries out an operation on frame memory 1.

### Selecting the input video

Select the input video on auxiliary bus 5 whether the target frame memory is 1 or 2.

Use the following procedure.

**1** Press the AUX 5 delegation button in the auxiliary bus block, turning it on.

**2** Press the cross-point button in the auxiliary bus block for the desired signal.

You can select movie as input video.

## Building a new video image and saving it in frame memory

Use the following procedure to combine the input video with the stored image (frame) or to freeze the input video and then save in frame memory.

**1** Press the FRAME MEM 1 button in the top menu section of the menu control block.

The FRAME MEM 1 menu appears.

**2** Select item 1 (MANUAL).

**3** Set F2 (OUTPUT SELECT) to "IN".

The video to be saved is output from the frame memory.

**4** Press the button assigned to the frame memory 1 video in the row A of either of the M/E blocks or the DSK block.

You can check the video changes in the remainder of this procedure on the monitor.

**5** Select the input video for the frame memory on the auxiliary bus 5.

*For details, see "Selecting the input video" on the previous page.*

*(Continued)*

**6** Select the method of combining the stored frame with the input video.

There are two possibilities, involving masking and non-additive mixing. Select the required combination, using the settings of F6 (INPUT MASK) and F7 (NAM) shown in the following table.

| F6 (INPUT MASK) setting | F7 (NAM) setting | Combination effect |
|---|---|---|
| ON | OFF | The stored frame is combined with the input video, which is masked by the mask signal. The mask source is a wipe pattern or a rectangular frame (the BOX option). |
| ON | ON | The stored frame is non-additive-mixed with the input video, which is masked by the mask signal. The mask source is a wipe pattern or a rectangular frame (the BOX option). |
| OFF | OFF | The input video is stored unaltered. |
| OFF | ON | The input video and stored frame are non-additive-mixed. |

For a masking operation, to blank the background (i.e. the stored frame), press F4 (MEMORY CLEAR).

**7** If you selected the "ON" setting for F6 (INPUT MASK) in the previous step **6**, use F8 (MASK SOURCE) to select the mask source, and adjust the parameters as necessary.

- BOX: rectangular frame key
- WIPE: wipe pattern selected on the M/E-1 wipe generator. (For frame memory 2, the wipe pattern selected on the M/E-2 wipe generator.)

**8** In a D1 system, press F5 (FREEZE MODE), and select whether to save the image by frame or by field.

- FRAME: 1 frame (2 fields)
- FIELD: 1 field

In a D2 system, this selection is not required; the image is always freezed by frame.

**9** When you are ready to freeze the frame, press F1 (FREEZE).

This saves the freeze frame in memory.

## Recalling the previous frame after saving to frame memory

After saving to frame memory using F1 (FREEZE) in manual mode or F1 (PAINT) in paint mode, you can restore the previous state by pressing F3 (LAST X). The frame memory includes a memory which is known as "Last X", and which holds the image which was in the normal frame memory before either of these function keys was pressed.

## Outputting the stored frame only

Use the following procedure to output the stored frame only to a monitor.

**1** In the FRAME MEMORY 1 menu, select item 1 (MANUAL).

**2** Set F2 (OUTPUT SELECT) to "MEM".

**3** In the row A of either of the M/E blocks or the DSK block, press the button assigned to the frame memory 1 video.

This displays the current stored frame on the monitor.

## Making a memory frame black

To clear the current memory frame and turn it to black, press F4 (MEMORY CLEAR).
This function operates equally in manual or paint mode.

## Paint mode - making a stored image with a trail

Use the following procedure to make an image with a trail and store it.

**1** Carry out steps **1** through **5** in "Building a new video image and saving it in frame memory" *(page 5-19)*.

**2** Select item 2 (PAINT).

This automatically selects the M/E-1 wipe pattern as being the key source.

*(Continued)*

**3** Press the M/E-1 button in the wipe control block, then press the POS ON button in the same block.

The wipe positioner is now activated.

**4** Move the wipe positioner, and position the wipe pattern in the place where you wish to begin the trail.

**5** Adjust the parameters as necessary, to get the required wipe pattern size and edge softness.

**6** If you wish to perform a non-additive mix of the input video to be frozen with an already frozen frame, press F6 (NAM), turning it on.

**7** When you are ready to freeze the input video, press F1 (PAINT), turning it on.

Saving to memory begins at this point.

**8** Move the positioner, automatically creating a trail.

**9** Press F1 (PAINT) again, turning it off.

The trail image is preserved in the frame memory.

## Rotating the background hue together with the positioner in the paint mode

When you have selected COLOR BKGD 1 as the input in paint mode, use the following procedure to rotate the background hue together with the movement of the positioner.

**1** In the FRAME MEMORY 1 or FRAME MEMORY 2 menu, select item 4 (LINK).

**2** Press F6 (BKGD 1 HUE ROTATE), turning it on.

## Moving the stored frame

Use the following procedure to move the stored frame with respect to the video space.

**1** In the FRAME MEMORY 1 menu, select item 3 (MOVE).

**2** Press F1 or F2 to select the type of frame to be moved.
- F1 (STILL): Move an frozen frame created using the manual or paint mode.
- F2 (LIVE): Move the (movie) input video.

If you press F2, indications for F6 through F8 appear.

**3** Press F3 or F4 to select the mode for the movement.
- F3 (COLOR): The color of the image does not change as you move it. In a D2 system, the minimum movements are 4 clock pulses horizontally and 2 scan lines vertically. In a D1 system, the minimum movements are 2 clock pulses horizontally and 1 scan line vertically.
- F4 (B & W): The color of the image changes as you move it. The minimum movements are 1 clock pulse horizontally and 1 scan line vertically.

**4** If you selected F2 (LIVE) in step **2**, use F6 (INPUT MASK) to determine whether the whole input video is used, or whether it is masked.
OFF: The whole input video is used.
ON: The input video is masked, either by a rectangular frame or a wipe pattern.

**5** If you set F6 (INPUT MASK) to "ON" in step **4** use F7 (MASK SOURCE) and F8 (MASK INVERT) to determine the mask to be used, and adjust the parameters if necessary.

**6** Adjust the parameters to move the frame selected in step **2** to the desired position.

### To return the frame to the original position

Press F5 (POS CENTER).

## Linking the actions of two frame memories

Use the following procedure to link the actions of frame memory 2 to those of frame memory 1, so that the two move in the same way.

**1** In the FRAME MEMORY 1 or FRAME MEMORY 2 menu, select item 4 (LINK).

**2** Set F1 (MEMORY LINK), to "ON".

The settings of frame memory 2 are now the same as those of frame memory 1.

**3** If using a wipe pattern in any of the manual, paint and move modes, set F2 (WIPE LINK) to "ON" as necessary.

The M/E-2 wipe pattern settings, including the positioner, are now the same as the M/E-1 wipe pattern settings.

## Freezing two different input signals simultaneously with the two frame memories

When "MEMORY LINK" is set to "ON", it is possible for different signals to be input to frame memory 1 and frame memory 2. This function allows keying with the M/E keyer on the frame memory signals, by using the frame memory 1 signal as key fill, and the frame memory 2 signal as key source. Use the following procedure to select a different input for frame memory 2.

**1** In the FRAME MEMORY 1 or FRAME MEMORY 2 menu, select item 4 (LINK).

**2** Set F1 (MEMORY LINK), to "ON".

**3** Set F2 (WIPE LINK) to "ON"as necessary.

**4** Set F3 (LINK) to "ON".

**5** Holding down F4 (BUTTON NO.), press the appropriate cross-point button in the AUX bus block to select the input signal to frame memory 2.

# Frame Memory Menu Display and Settings

## Example FRAME MEMORY 1 menu display

Pressing the FRAME MEM 1 button in the TOP MENU section of the menu control block displays the FRAME MEMORY 1 menu, as shown below.

The FRAME MEMORY 2 menu shows the corresponding items.

Use this example display in combination with the table on the following pages for reference when making the settings.
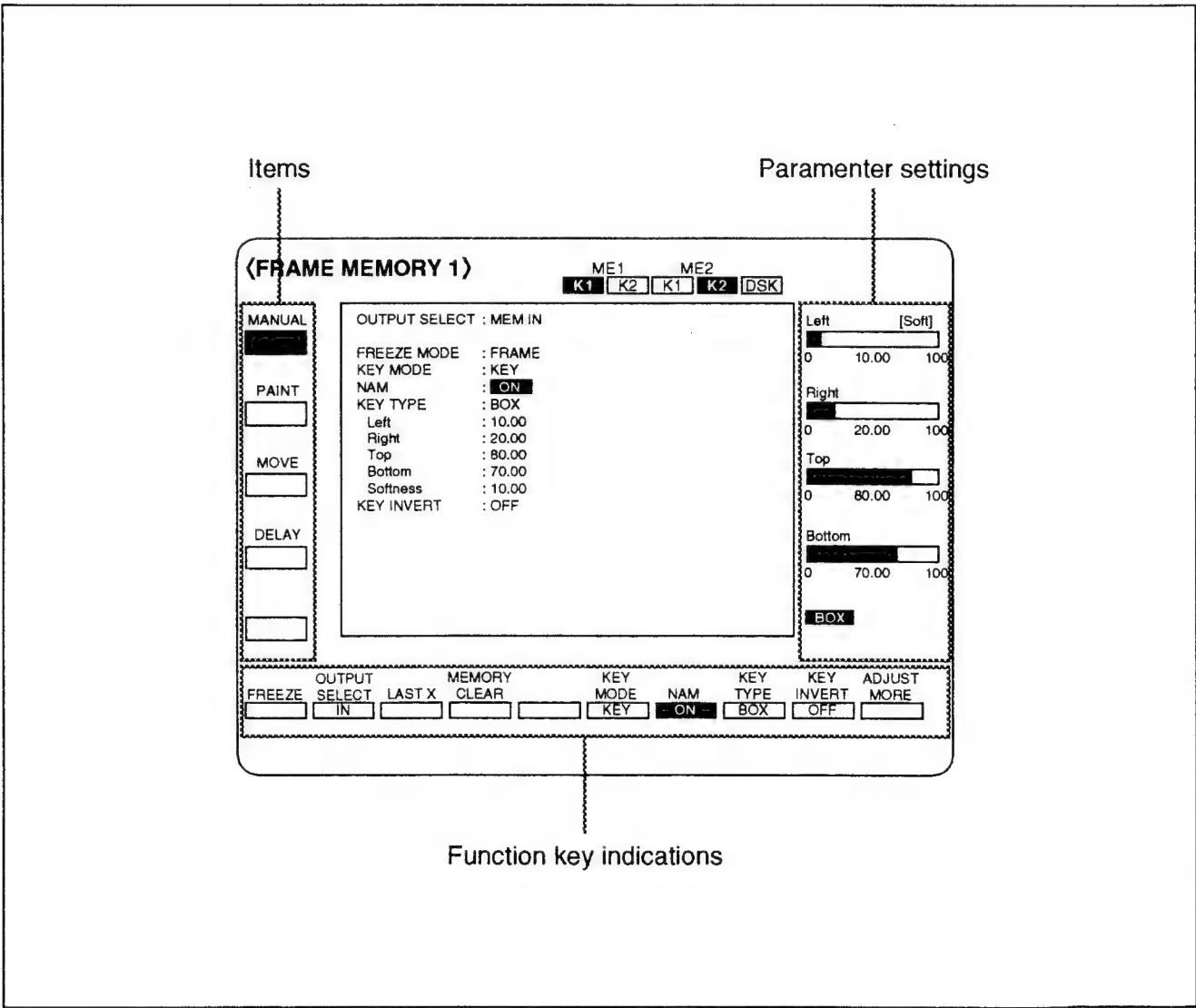


Example FRAME MEMORY 1 menu display (for D2 systems)

## Settings in the FRAME MEMORY 1 and FRAME MEMORY 2 menus

To identify the positions of the items listed in this table, see the illustration on the previous page.

Settings in the FRAME MEMORY 1 and FRAME MEMORY 2 menus

| Item | Function keys | | | Parameter setting |
|---|---|---|---|---|
| 1: MANUAL | F1: FREEZE | Save freeze frame to memory. | | — |
| | F2: OUTPUT SELECT | Select the image output on the frame memory cross-point number.<br>• MEM: the image currently held in frame memory<br>• IN: the video input to frame memory | | — |
| | F3: LAST X | Restore the image before the frame memory was last written to. | | — |
| | F4: MEMORY CLEAR | Replace the stored frame with all black. | | — |
| | F5: FREEZE MODE | Select saving by frame or by field. This setting appears only on the D1 systems. | | — |
| | F6: INPUT MASK | Select whether to store the whole input video image (OFF) or to store a part of the input video image (ON) after masking. | | — |
| | F7: NAM | Toggle non-additive mixing of the input video with the stored frame on and off. | | — |
| | F8: MASK SOURCE | When F6 is set to ON, select the type of mask: a rectangular frame key (BOX) or wipe pattern (WIPE). | BOX | 1 (Top): (0.00 to 100.00)<br>2 (Left): (0.00 to 100.00)<br>3 (Right): (0.00 to 100.00)<br>4 (Bottom):<br>(0.00 to 100.00)<br>1 (Softness): degree of edge softness<br>(0.00 to 100.00) |
| | | | WIPE | 1 (Size): (0.00 to 100.00)<br>2 (Softness): degree of edge softness<br>(0.00 to 100.00) |

*(Continued)*

# Frame Memory

| Item | Function keys | | Parameter setting |
|---|---|---|---|
| 1: MANUAL | F9: MASK INVERT | When F6 is set to ON, toggle mask inversion on or off. | — |
| | F10: ADJUST MORE | Display next set of parameters for adjustment. | |
| 2: PAINT | F1: PAINT | From the moment this is switched on until it is switched off, the image is written to memory in paint mode, leaving a trail. | [PAINT]<br>1 (Size): (0.00 to 100.00)<br>2 (Softness): degree of edge softness (0.00 to 100.00)<br>[COLOR BKGD 1 MATTE 1]<br>1 (Luminance): (0.00 to 100.00)<br>2 (Saturation): (0.00 to 100.00)<br>3 (Hue): (0.00 to 100.00) |
| | F3: LAST X | Restore the image before the frame memory was last written to. | — |
| | F4: MEMORY CLEAR | Replace the stored frame with all black. | — |
| | F5: FREEZE MODE | Select saving by frame or by field. This setting appears only on D1 systems. | — |
| | F6: NAM | Enable or disable non-additive mixing of the input frame with the frame in memory. | — |
| | F7: M/E-1 a) WIPE NO. | Enter the wipe pattern number for M/E-1 a) from the numeric keypad. | After pressing, enter the wipe pattern number from the numeric keypad. |
| | F9: ADJUST SELECT | Parameter group selection. | — |
| 3: MOVE | PIC-TURE | F1: STILL | Move a frozen frame. | 1 (H Move): Moves to the right as value increases. (−50.00 to +50.00)<br>2 (V Move): Moves up as value increases. (−50.00 to +50.00) |
| | | F2: LIVE | Move a live input video (movie). | |

a) Or M/E-2 for frame memory 2.

Settings in the FRAME MEMORY 1 and FRAME MEMORY 2 menus

| Item | Function keys | | | | Parameter setting |
|---|---|---|---|---|---|
| 3: MOVE | MOVE MODE | F3: COLOR | The color of the image does not change as you move it. The minimum movements depend on the system type.<br>• D2 system: 4 clock pulses horizontally; 2 scan lines vertically<br>• D1 system: 2 clock pulses horizontally; 1 scan line vertically | | — |
| | | F4: B & W | The color of the image does change as you move it. The minimum movements are 1 clock pulse horizontally and 1 scan line vertically. | | — |
| | F5: POS CENTER | | Return the image to its original position. | | — |
| | F6: INPUT MASK (not displayed when F1 is selected) | | Select whether to move the whole input video (OFF), or to move only a masked portion of the input video (ON). | | — |
| | F7: MASK SOURCE (not displayed when F1 is selected) | | When F6 above is set to "ON", select whether to use a rectangular frame (BOX) or wipe pattern (WIPE) as the mask signal. | BOX | 1 (Top): Top position (0.00 to 100.00)<br>2 (Left): Left position (0.00 to 100.00)<br>3 (Right): Right position (0.00 to 100.00)<br>4 (Bottom): Bottom position (0.00 to 100.00)<br>1 (Softness): Degree of softness of edge (0.00 to 100.00) |
| | | | | WIPE | 1 (Size): Pattern size (0.00 to 100.00)<br>2 (Softness): Degree of softness of edge (0.00 to 100.00) |
| | F8: MASK INVERT (not displayed when F1 is selected) | | When F6 above is set to "ON", select whether mask pattern is inverted (ON) or not (OFF). | | — |
| | F9: ADJUST SELECT | | Parameter group selection. | | — |

*(Continued)*

# Frame Memory

| Item | Function keys | | | Parameter setting |
|------|---------------|---|---|-------------------|
| 4: LINK | F1: MEMORY LINK | | Select whether to move frame memory 2 together with frame memory 1 (ON) or not (OFF). | — |
| | F2: WIPE LINK | | Select whether to make the M/E-2 wipe pattern settings the same as M/E-1 (ON) or not (OFF). | — |
| | CH-2 INPUT | F3: LINK | Select whether to make the input signal selection for frame memory 2 different from that for frame memory 1 (ON), or not (OFF). | — |
| | | F4: BUTTON NO. | When F3 is set to "ON", set the input for frame memory 2. | Holding down F4, press the cross-point button in the AUX bus block. |
| | F6: BKGD 1 HUE ROTATE | | When PAINT is set to "ON", rotate the hue of COLOR BKGD 1 MATTE 1 together with the movement of the wipe positioner. | — |
| 5: LOCK | Press this, turning it on, to inhibit writing to the frame memory. | | | — |

# Key Frame Effects

Fitting the optional BKDS-6050 key frame control panel in the control panel allows you to build key frame effects.
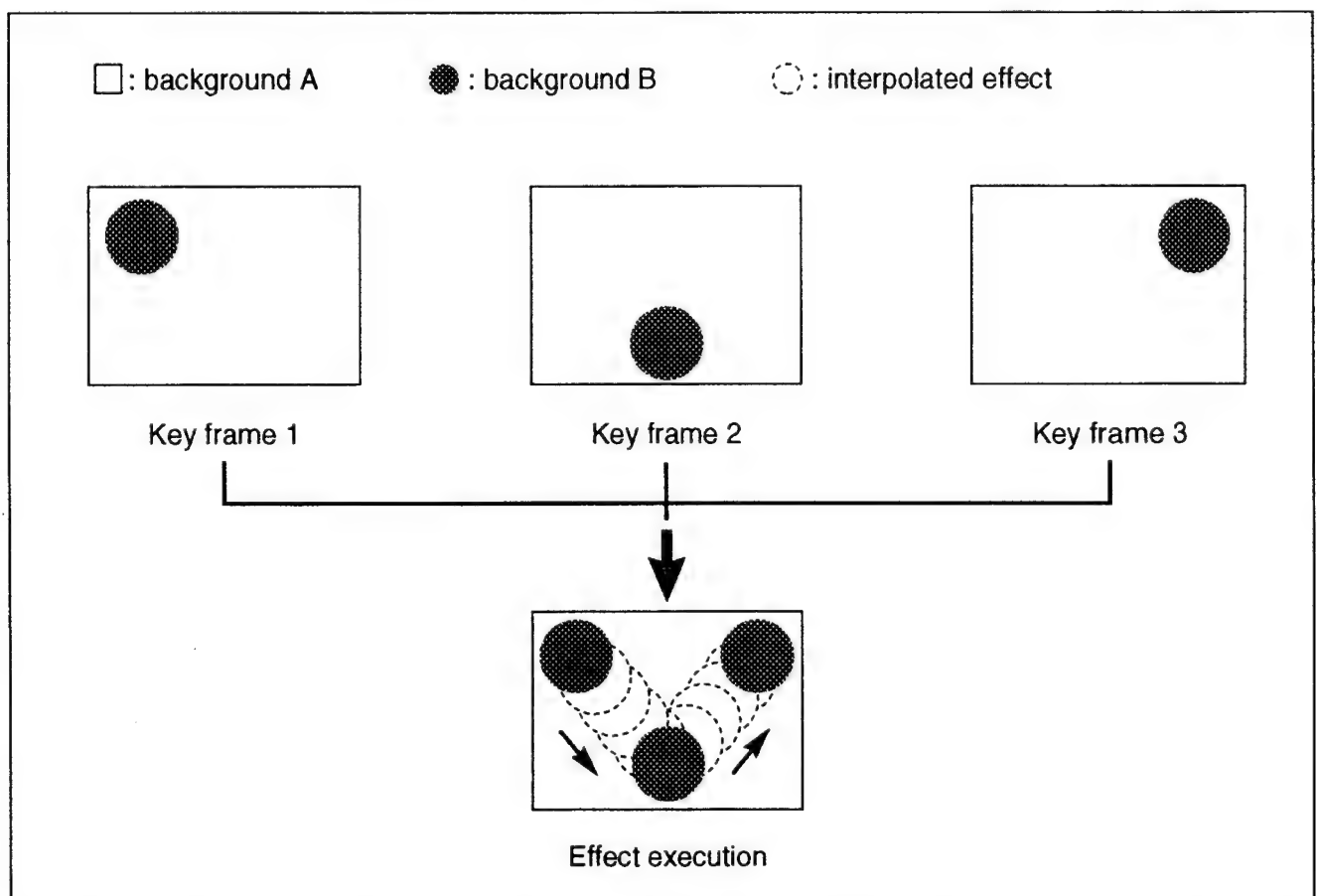This section gives an overview of key frame effects and the associated operations.

## Overview

A key frame is a set of data which determines the instantaneous state of an image which varies with time.
An effect, in turn, is obtained from a sequence of key frames, interpolated along the time axis so as to appear continuous.

The following figure illustrates the creation of three key frames with a circular wipe pattern in three different positions, and the resulting interpolated effect.

☐ : background A          ● : background B          ⟨⟩ : interpolated effect

Key frame 1                 Key frame 2                 Key frame 3
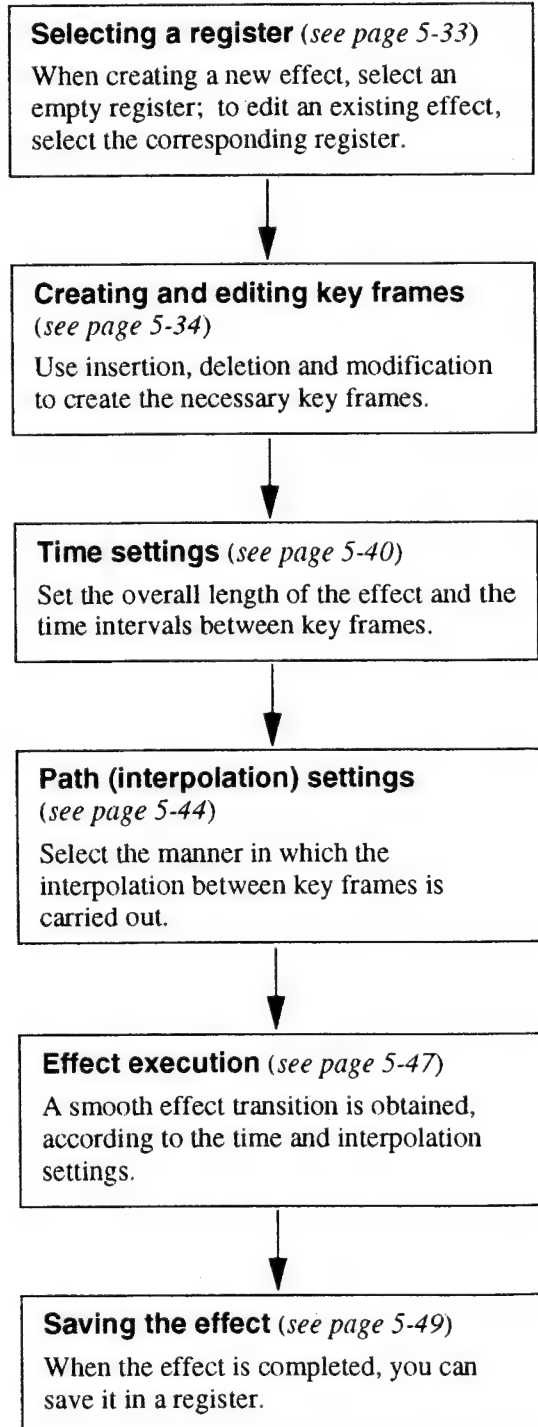
Effect execution

Example of key frame effect creation

A series of key frames for producing an effect can be held in memory, identified by a register number. You can then recall the effect, and play it back.

Effects held in registers in DMEs (up to two channels) connected to the switcher can also be controlled from the switcher.

# Operation Sequence

The following diagram shows the principal steps in the process from creating the key frames to the execution of the effect.

**Selecting a register** (*see page 5-33*)

When creating a new effect, select an empty register; to edit an existing effect, select the corresponding register.

↓

**Creating and editing key frames** (*see page 5-34*)

Use insertion, deletion and modification to create the necessary key frames.

↓

**Time settings** (*see page 5-40*)

Set the overall length of the effect and the time intervals between key frames.

↓

**Path (interpolation) settings** (*see page 5-44*)

Select the manner in which the interpolation between key frames is carried out.

↓

**Effect execution** (*see page 5-47*)

A smooth effect transition is obtained, according to the time and interpolation settings.

↓

**Saving the effect** (*see page 5-49*)

When the effect is completed, you can save it in a register.

# Accessing Registers

### Key frames and registers

The collection of key frames making up an effect is stored in memory, and identified by a register number from 1 to 99. Each register is divided into a number of sub-registers as shown in the following figure.



Registers for key frame effects
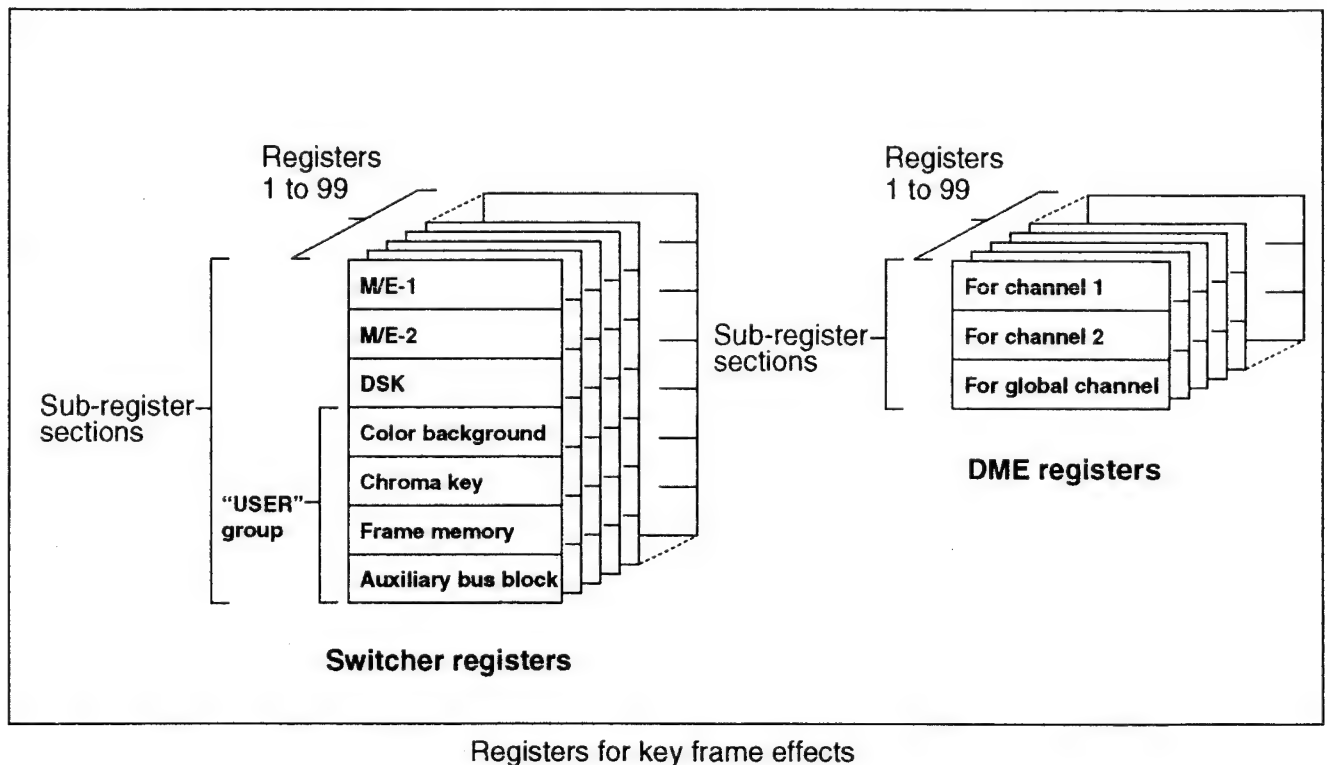
Of the sub-registers, those for color backgrounds, for chroma key, for frame memory, and for the AUX bus block, are referred to collectively by the identification "USER", by which they can all be accessed together.

Once an effect is saved in a switcher register, you can copy or move the effect from one register to another (*see Chapter 7*) or save it to a floppy disk (*see Chapter 8*).

## Accessing a register

To recall the contents of a register, use the following procedure.

**1** Press the EFF button in the numeric keypad block, turning it on.

This allocates the numeric keypad block to key frame operations.

**2** Press the RCALL button, turning it on.

**3** Press the sub-register selection buttons for the sub-registers you wish to access, turning them on.

**4** Enter the number of the register you wish to access.

When creating a completely new effect, enter the number of an empty register. To access the first empty register after the currently accessed register, without making an explicit specification, enter a period only as the number.

**5** Press the ENTER button.

This accesses the specified register, and recalls its contents.

# Key Frame Creation and Editing

### Specifying edit points

To insert, modify, or delete a key frame, it is necessary to stop the effect at the appropriate point on the time axis. This is referred to as an edit point.

It is possible to carry out editing at any key frame in the effect, or between two key frames.

To stop the effect at the edit point, use any of the following methods after turnig the EDIT ENBL button on.

- Turn on the ENBL button, then turn the jog dial and stop the effect at the desired point.
- Press the NEXT KF button to stop the effect at the next key frame after the current position.
- Press the PREV KF button to stop the effect at the last key frame before the current position.
- To move to a specified key frame, press the GO TO KF/TC button, and enter the number of the key frame from the numeric keypad.
- To move to a specified time code position, press the SHIFT button turning it on, then press the GO TO KF/TC button, and enter the time code value from the numeric keypad.

### Reference sub-register

When you access more than one sub-register, if for example you press the NEXT KF button, one sub-register is used to determine where the next key frame is, and the other sub-registers follow suit. This is termed the reference sub-register, and the precedence of the sub-registers is fixed, as follows.

M/E-1 > M/E-2 > DSK > USER > DME1 > DME2 > GLBL

To change the reference sub-register, holding down the EFF button in the numeric keypad block, press the sub-register selection button corresponding to the sub-register to be the new reference. The pressed sub-register selection button will light green.

## Selecting the sub-registers for editing

To select the sub-registers for editing, turn on those of the sub-register selection buttons (M/E 1, M/E 2, DSK, USER, DME 1, DME 2, DME GLBL) corresponding to the sub-registers to which you wish to apply editing.

It is not possible, however, to apply editing to sub-registers which were not selected in the register accessing procedure (page 5-33). (Effect execution applies to all sub-registers accessed.)

## Creating a new key frame effect

To create a new key frame effect, first access an empty register, then use the following procedure to create and insert the frames one by one. In this case it is not necessary to specify the edit points.

**1** Press the EDIT ENBL button in the key frame editing section, turning it on.

The system switches to edit mode, allowing key frames to be created and edited.

**2** Create the image for the first key frame.

**3** Press the INSRT button.

This saves the current image as the first key frame.

**4** Create the image for the next key frame.

**5** Press the INSRT button.

This inserts the new key frame (key frame 2) after key frame 1.

Repeat steps **4** and **5** as necessary, until the required number of key frames are created.

# Key Frame Effects

## Inserting a key frame

Use the following procedure to insert a key frame in an existing effect.

**1** Press the EDIT ENBL button, turning it on.

**2** Stop the effect at the required edit point.

**3** Create the key frame to be inserted.

**4** When the edit point is on a key frame, to insert the new key frame before, press the SHIFT button turning it on; to insert after the edit point key frame, leave the SHIFT button off.

**5** Press the INSRT button.

This inserts the new key frame.

When you insert a new key frame, the total effect duration may change.

*For details see the section "Changes in effect duration due to inserted key frames" (page 5-42).*

## Modifying key frames

Use the following procedure to modify already created key frames.

**1** Press the EDIT ENBL button, turning it on.

**2** Stop the effect at the required edit point.

If the edit point is on a key frame, that key frame will be modified; if the edit point is between key frames, the previous key frame will be modified.

**3** Create the required new form of the key frame.

**4** When modifying only a single key frame, skip to step **9**.

To apply an identical modification to a number of key frames, press the FROM TO button.

The button lights, and the numbers of the current key frame and the last key frame appear on the numeric keypad display as the range.

Example: "10-20" where the current key frame is number 10 and the last key frame is number 20.

**5** To change the beginning of the range, enter the new key frame number with the numeric keypad.

**6** Press the ENTER button.

**7** To change the end of the range, enter the new key frame number with the numeric keypad.

**8** Press the ENTER button.

**9** Press the MOD button.

This carries out the modification.

## Deleting key frames

Use the following procedure to delete key frames.

**1** Press the EDIT ENBL button, turning it on.

**2** Stop the effect at the required edit point.

If the edit point is on a key frame, that key frame will be deleted; if the edit point is between key frames, the previous key frame will be deleted.

**3** To delete a number of key frames together, press the FROM TO button.

*For details of the procedure for specifying the range, see the previous section "Modifying key frames."*

*(Continued)*

**4** Press the DEL button.

This deletes the key frame or frames.

When you delete key frames, the total effect duration changes.

*For details see the section "Changes in effect duration due to key frame deletion" (page 5-43).*

### Restoring deleted key frames

Until the next delete or copy operation, deleted key frames are held in the paste buffer. Using the PASTE button, you can insert the key frame or frames from the buffer in an arbitrary position in the effect, according to the following procedure.

**1** Stop the effect at the position where you wish to make the insertion.

**2** When the edit point is on a key frame, to make the insertion before, press the SHIFT button turning it on; to insert after the edit point key frame, leave the SHIFT button off.

**3** Press the PASTE button.

This inserts the key frame or frames from the paste buffer.

### Copying key frames

**1** Press the EDIT ENBL button, turning it on.

**2** Stop the effect on the key frame you wish to copy.

If the edit point is on a key frame, that key frame will be copied; if the edit point is between key frames, the previous key frame will be copied.

**3** Press the COPY button.

This copies the key frame specified in step **2** into the paste buffer.

**4** Move to the edit point where you wish to insert the copy of the key frame.

**5** When the edit point is on a key frame, to make the insertion before, press the SHIFT button turning it on; to insert after the edit point key frame, leave the SHIFT button off.

**6** Press the PASTE button.

This inserts the key frame from the paste buffer.

## Undoing the effect of an edit

When you press the INSRT, DEL or MOD button, the previous state is saved in an area of memory known as the "LAST X buffer." After an erroneous operation, you can return to the previous key frame state by pressing the LAST X button in the numeric keypad block.

# Time Settings

## Key frame duration and effect duration

Effect execution times are determined by the effect duration and the key frame durations.

- A key frame duration is the execution time from a key frame until the next key frame.
- The effect duration is the total execution time from the first key frame of the effect to the last key frame.

If you change the effect duration, the key frame durations within the effect are all automatically changed in proportion.
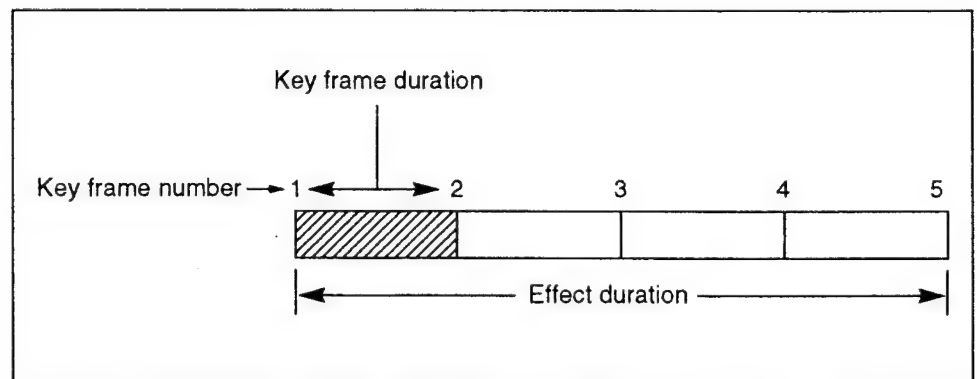


Schematic of key frame durations and effect duration

## Setting a key frame duration

The default key frame duration is one second. You can change the duration of an individual key frame using the following procedure.

**1** Press the EDIT ENBL button, turning it on.

**2** Stop the effect on the key frame whose duration you wish to change.

**3** Press the KF DUR button.

**4** Enter the numerical value in seconds and frames (ss.ff) from the numeric keypad, and press the ENTER button.

For example, enter 9.20 to set a duration of 9 seconds and 20 frames.

**Note**

Key frame durations may change not only by explicit setting as here, but also if the overall effect duration is changed.

## Setting the effect duration

**1** Press the EDIT ENBL button, turning it on.

**2** Press the EFF DUR button.

**3** Enter the numerical value in minutes, seconds and frames (mm.ss.ff) from the numeric keypad, and press the ENTER button.
For example, enter 3.7.15 to set a duration of 3 minutes, 7 seconds and 15 frames.

The effect duration also changes when you insert or delete key frames, as follows.

# Key Frame Effects

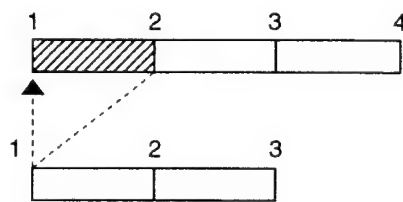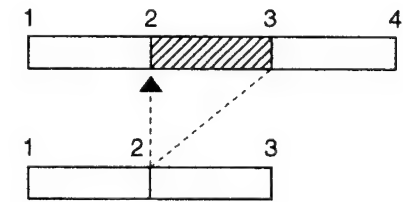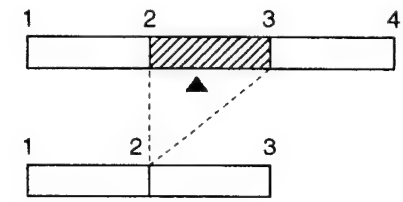## Changes in effect duration due to inserted key frames
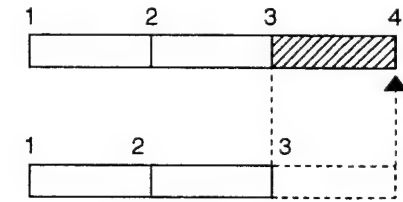
- When the effect is stopped on a key frame, then if you insert a key frame, the effect duration is increased by the duration of the inserted key frame.
- When the effect is stopped between key frames, then inserting a key frame does not change the effect duration.

| | |
|---|---|
| Insertion before the first key frame |  |
| Insertion between two key frame |  |
| Insertion at a key frame |  |
| Insertion after the last key frame |  |

Changes in effect duration and key frame insertion position

## Changes in effect duration due to key frame deletion

When you delete a key frame, the effect duration is always decreased by the duration of the deleted key frame.

| | |
|---|---|
| Deletion on the first key frame |  |
| Deletion at a key frame |  |
| Deletion between two key frame |  |
| Deletion on the last key frame |  |

Key frame deletion position and changes in effect duration

## Setting the delay time

The delay time is the delay from the beginning of effect execution until the first key frame, that is, until the effect proper begins. The delay is not included in the effect duration, which therefore does not change when you change the delay. Use the following procedure to change the delay time.

**1** Press the EDIT ENBL button, turning it on.

**2** Press the DELAY button.

**3** Enter the numerical value in seconds and frames (ss.ff) from the numeric keypad, and press the ENTER button.
For example, enter 1.15 to set a duration of 1 second and 15 frames.

# Path (interpolation) Settings

These settings determine the way in which interpolation from one key frame to the next is carried out, or in other words the nature of the path followed between key frames. Use the following procedure to make the selection.

**1** In the TOP MENU section of the control panel, press the KF PATH button.

The KEY FRAME menu appears.

**2** Press F10 (PATH).

The KEY FRAME PATH menu appears.

Channel subject to editing (reverse video)

Currently selected item (reverse video)

| ⟨KEY FRAME PATH⟩ | | EFF= 99: TEST–EFF | | PAUSE = 0 : 05 : 00 | RECALL & REWIND |

EFF= 99: TEST–EFF   PAUSE = 0 : 05 : 00   RECALL & REWIND

00 : 02 : 00

Tension

| | ALL | | | |
|---|---|---|---|---|
| | POSITIONER | WIPE | KEYER | TRANSITION |
| **M/E-1** 10/999 | WIPE POS | WIPE CW | KEYER S | TRANSITION |
| M/E-2 8+/20 | WIPE POS | WIPE CCW | KEYER S | TRANSITION |
| **DSK** 5/10 | | | DSK S | TRANSITION |
| **USER** 3/25 | BKGD 1 POS | COLOR BKGD 1 CCW | CHR KEYER 1 L | |
| | BKGD 2 POS OFF | COLOR BKGD 2 CCW | CHR KEYER 2 L | |

Bias

Continuity

SPLINE CURVE ~ Selected interpolation curve
M/E-1 WIPE ~ Reference channel

| CURVE | | | | | HUE | | | | TIME LINE |
|---|---|---|---|---|---|---|---|---|---|
| OFF | STEP | LINEAR | S-CURVE | SPLINE | CW | CCW | LONG | SHORT | |

For a D2 system, there is only one keyer, and the lower box is blank.

Example KEY FRAME PATH menu display

**3** Stop the effect at the required edit point.

If the edit point is between key frames, the setting will apply to the transition between those frames; if the edit point is on a key frame, the setting applies to the transition from that key frame to the next.

**4** Use the [↑], [↓], [←] and [→] buttons in the menu control block to align the cursor on the required item.

*(Continued)*

**5** Press one of F1 (OFF) to F5 (SPLINE) to select the interpolation curve.

F1 (OFF): Executing the effect produces no change.

F2 (STEP): There is no gradual change; the effect changes at each key frame.

F3 (LINEAR): The transition from one key frame to the next is carried out at a constant rate.

F4 (S-CURVE): The transition accelerates from one key frame, and decelerates to the next one, thus having a maximum rate midway between key frames.

F5 (SPLINE): A spline curve is used to provide a smooth transition.

The selected interpolation curve (path) is marked on the menu display.

**6** If you selected F5 (SPLINE) in step **5**, adjust control knobs 1 to 3 as follows.

- Control 1 (Tension): −4.00 to +4.00
- Control 2 (Bias): −4.00 to +4.00
- Control 3 (Continuity): −4.00 to +4.00

**7** Press one of F6 (CW) to F9 (SHORT) to select the hue interpolation path.

F6 (CW): The hue rotates clockwise as viewed on a vectorscope.

F7 (CCW): The hue rotates counterclockwise as viewed on a vectorscope.

F8 (LONG): The hue changes by the maximum amount. If there is no difference of hue between two key frames, the hue rotates clockwise through 360 degrees.

F9 (SHORT): The hue changes by the minimum amount.

The selected hue interpolation path is marked on the menu display.

Repeat steps **3** to **7** as necessary to make the settings for all of the key frames.

# Effect Execution

You can execute, or play back, the effect, using either the RUN button or the jog dial, to obtain a continuous segment of video. Use the following procedures.

## Execution with the jog dial

Use the following procedure.

**1** Press the ENBL button, turning it on.

**2** To execute the effect in the forward direction, turn the jog dial clockwise.

When positioned partway through the effect, or after effect execution is completed, you can also execute the effect backwards, by turning the jog dial counterclockwise. Even if the REV button is lit, it does not affect the direction in which the effect is executed.

The speed of effect execution when controlled by the jog dial can be set to a number of different levels using a menu operation.

*For details of the setting, see page 5-51.*

## Execution with the RUN button

To execute the effect automatically, press the RUN button. Pressing the RUN button again during execution stops the effect at that point. Press the RUN button once more to resume execution.
- If the REV button is lit, the effect is executed in the reverse direction.
- If the STOP NEXT KF button is lit, the effect stops at the next key frame.
- If a pause time point is set at some point during the effect, the execution stops when it reaches this point.

# Key Frame Effects

### Moving to the first key frame of the effect

Press the REWIND button to move to the first key frame of the effect.

### Execution with a combination of the jog dial and the RUN button

- After executing part of the effect with the jog dial, if you press the RUN button, the remainder of the effect is executed automatically.
- While executing the effect with the RUN button, the jog dial is disabled (the ENBL button is off).

### Repeated execution of the effect

To execute the same effect repeatedly, use the following procedure.

**1** Press the LOOP button, turning it on.

**2** Press the RUN button to execute the effect.

The effect execution loops around from the last key frame to the first key frame, and repeats the effect indefinitely. There is no interpolation between the last key frame and the first key frame. If the REV button is lit, the effect is repeated in the reverse direction.
To stop the repeated execution, press the LOOP button, turning it off, or press the REWIND button.

### Executing an effect without cross-point changes

Key frames normally include cross-point selection information. If, however, you press the XPT DSBL button, turning it on, the effect is executed with the current input signal selection state unchanged.

# Saving Effects

## Saving an effect in a register

Use the following procedure.

**1** In the numeric keypad block, press the STORE/LEARN button, turning it on.

**2** Enter the register number in which you wish to save the effect.

To save the effect in the first empty register after the currently recalled register, enter a period only.

**3** Press the ENTER button.

This saves the current effect in the specified register.

# Displaying Effect Information

You can check the current key frame progress state, using the menu screen.

### Displaying the time line screen

In the TOP MENU section of the control panel, press the KF PATH button; the KEY FRAME menu appears as shown below. This screen displays the state of the currently recalled effect, with a time line for each of the sub-registers.

Make the key frame settings by referring to the following figure and the table on the next page.
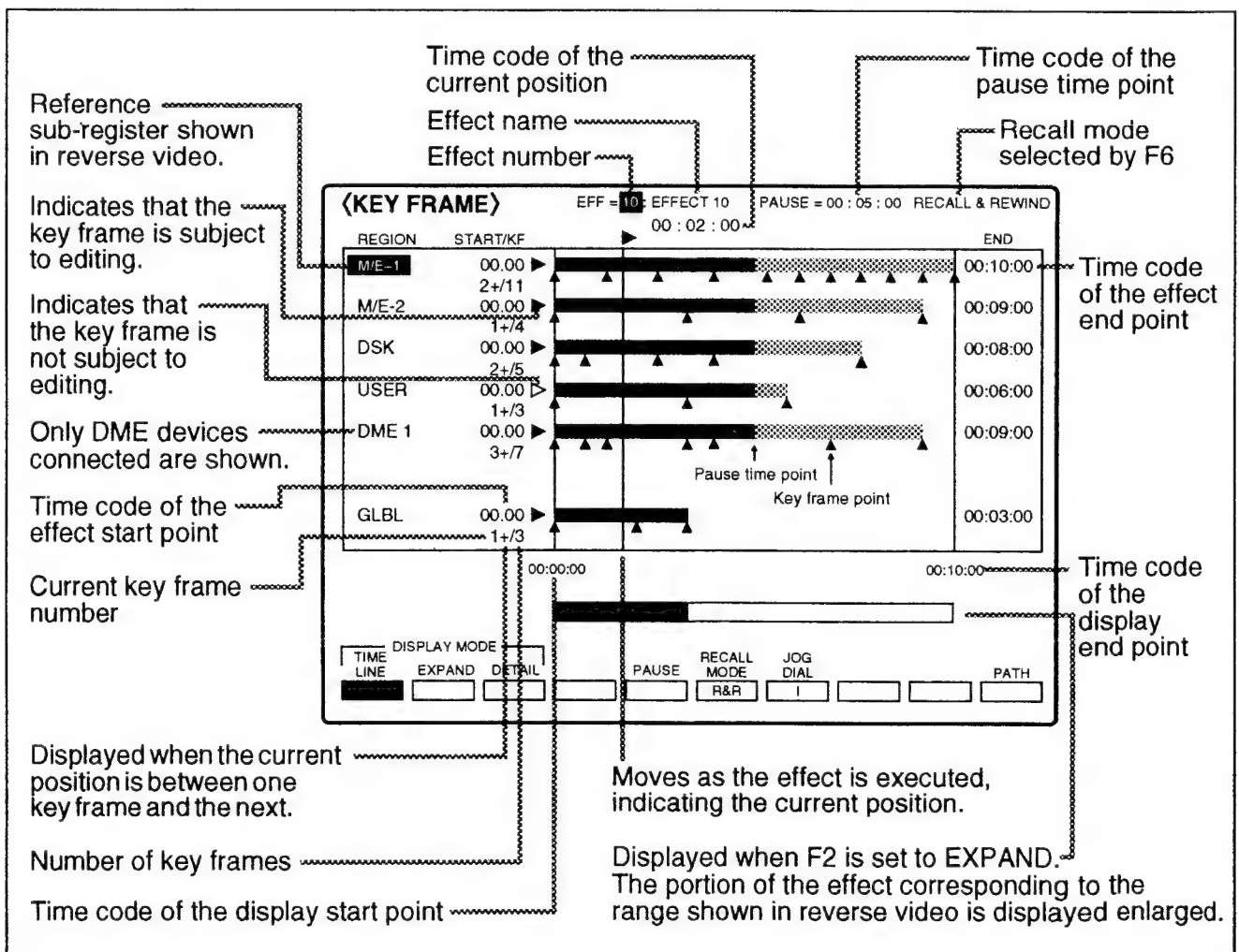


Example KEY FRAME menu time line display

KEY FRAME menu settings

| Function key indication and function | | Setting |
|---|---|---|
| DISPLAY MODE | F1 (TIME LINE): Shows the time line display. | Press the function key, switching it to reverse video. |
| | F2 (EXPAND): Expands the time line display. | Press the function key, switching it to reverse video. The range selected with control knob 4 is displayed enlarged. |
| | F3 (DETAIL): Shows the detailed display. | Press the function key, switching it to reverse video. |
| F5 (PAUSE): Sets a point (known as a "pause time point"), where the effect will stop. Only one pause time point can be set for a single effect. | | Press the function key, switching it to reverse video, and enter a time code value from the numeric keypad. To remove the pause time point setting, enter zero. |
| F6 (RECALL MODE): Determines whether to show the first key frame when the effect is recalled. | | Pressing the function key toggles between "RECALL" and "R & R" (Recall & Rewind). RECALL: When the effect is recalled, the first key frame is not shown. R & R: When the effect is recalled, the first key frame is shown. |
| F7 (JOG DIAL): Selects the speed of effect execution when controlled by the jog dial. | | Pressing the function key cycles through the following speed settings: 1/4, 1/2, 1, 2, 4 |
| F10 (PATH): Shows the KEY FRAME PATH menu (see page 5-45) used to set the interpolation path between key frames. | | — |

# Key Frame Effects

## Displaying the detailed display

When the time line display is shown, pressing F1 (SHOW) displays the screen shown in the figure below.

This screen gives detailed information for each key frame on the reference sub-register. For details of the settings, see the table on the previous page.
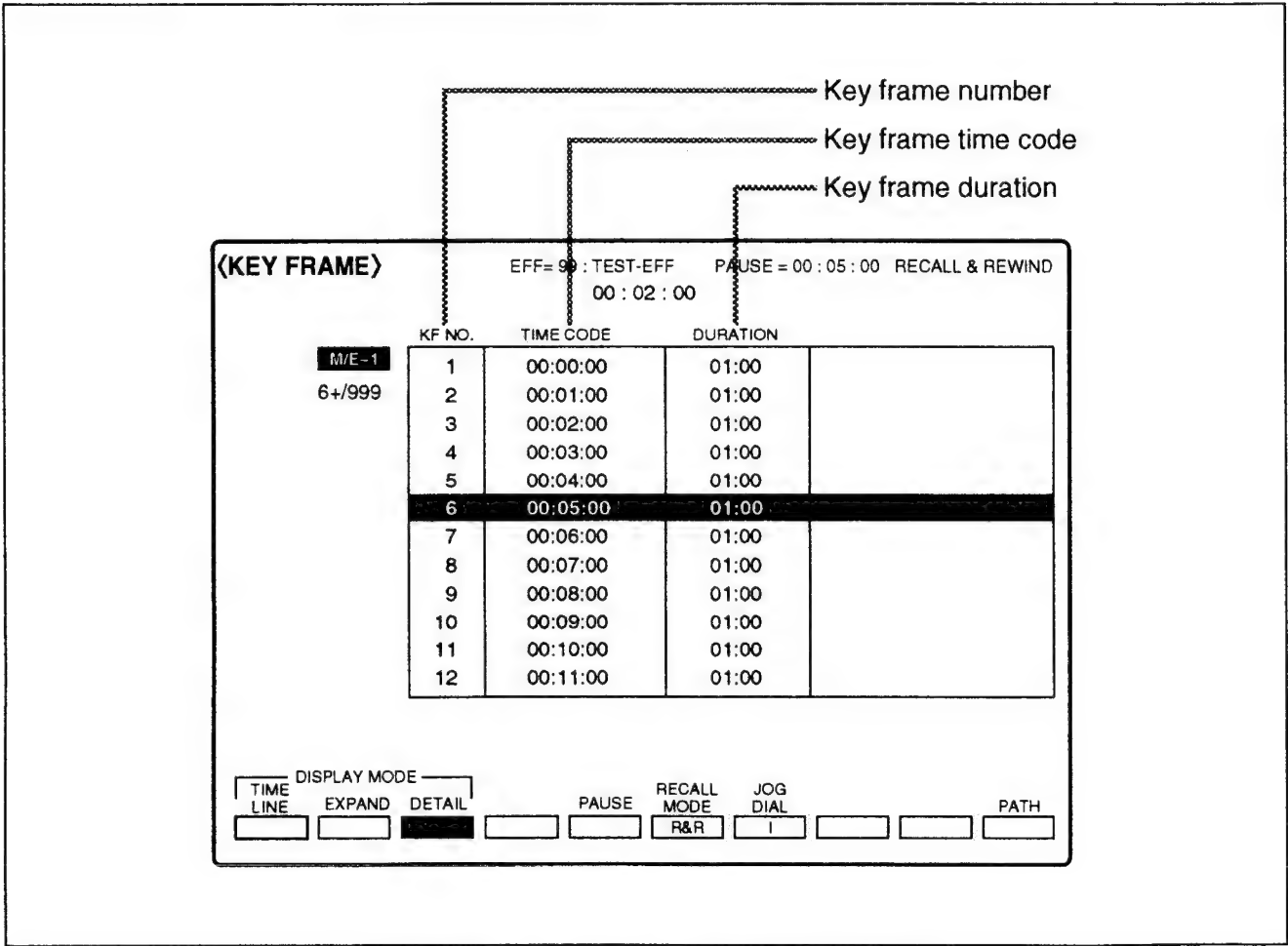


Example KEY FRAME menu detailed display
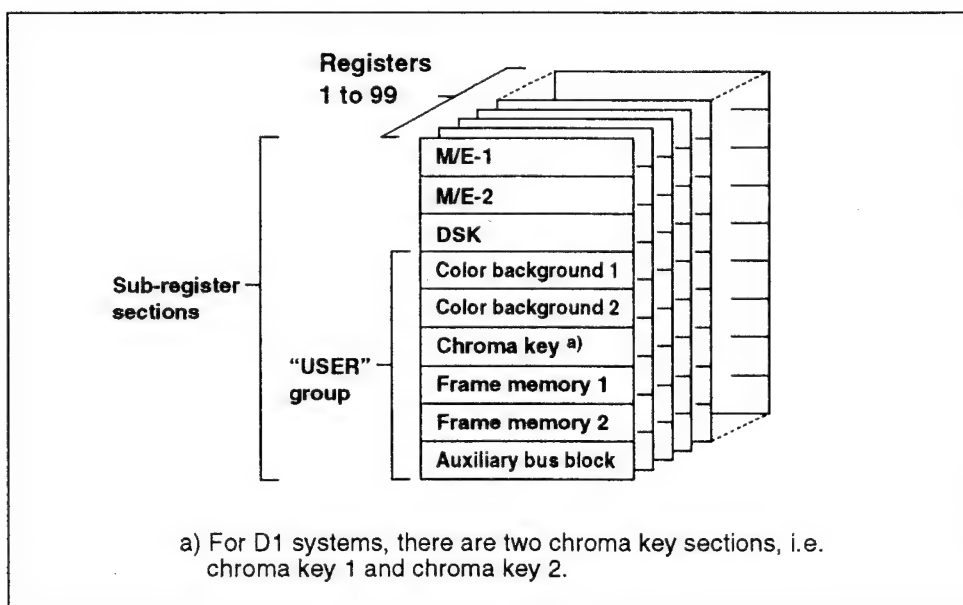
# Chapter 6
# Snapshots

# Overview

Taking a snapshot means making a copy of all the current settings governing the state of the switcher, and saving it in memory for later recall. This section describes how to save and recall snapshots.

## Snapshots and Registers

Snapshots are held in units of memory termed registers, numbered from 1 to 99. Each register comprises a number of sub-registers, each holding the data relating to a different section of the control panel settings; basically it is possible to save and recall a whole register (i.e. all sections) or various sub-registers of a single register. There are nine (for D2 systems) or ten (for D1 systems) of these sections, as shown in the following figure.



Registers
1 to 99

Sub-register sections

"USER" group

M/E-1
M/E-2
DSK
Color background 1
Color background 2
Chroma key a)
Frame memory 1
Frame memory 2
Auxiliary bus block

a) For D1 systems, there are two chroma key sections, i.e. chroma key 1 and chroma key 2.

Sub-register sections holding snapshots

Snapshots of six (for D2 systems) or seven (for D1 systems) of these sections – the color background, chroma key, frame memory, and auxiliary bus block sections – are saved and recalled using the USER button in the numeric keypad block. You can configure the USER button to control all of these sections together, or any other combination of them, using the REGISTER menu *(see page 7-10)*.

The REGISTER menu also provides a display of the registers, and allows you to carry out various manipulations, such as copying or deleting the register contents.

Additionally, you can save or recall any combination of the snapshots for the M/E-1, M/E-2, DSK, and USER subsets.

# Snapshot Attributes

There are also four attributes you can attach when saving a snapshot. These control the system behavior when a snapshot is recalled, as follows.

**Effect dissolve attribute:** When the snapshot is recalled, the new settings are faded in gradually.

**Auto transition attribute:** When the snapshot is recalled, an auto transition starts.

**Cross-point disable attribute:** When the snapshot is recalled, the cross-point button selections are not changed. In other words this recalls the settings independent of the signal selections.

**GPI output attributes:** These trigger the respective GPI outputs. This selection is made from the REGISTER menu *(page 7-9)*. These attributes apply to a whole register, and cannot be set independently for sub-register sections.

You can use the REGISTER menu *(see page 7-11)* to check which attributes are assigned to which snapshots.

## Attribute restrictions

Not all attributes can be applied to all sub-register sections. The following table shows which combinations are possible.

| Sub-register section | Effect dissolve | Auto transition | Cross-point disable |
|---|---|---|---|
| M/E-1 | Yes | Yes | Yes |
| M/E-2 | Yes | Yes | Yes |
| DSK | Yes | Yes | Yes |
| Color backgrounds | Yes | No | No |
| Chroma key | Yes | No | No |
| Frame memory | No | No | No |
| Auxiliary bus block | No | No | Yes |

# Snapshot Operations

This section describes how to save and recall snapshots.

## Snapshot Saving

Saving a snapshot is done using the control panel buttons in the numeric keypad block. See "Numeric Keypad Block" *(page 2-16)* for more details of the buttons.

> **Note**
>
> Carrying out snapshot saving destroys any existing information in the specified register (or sub-registers). Always be sure that any existing data is not wanted before selecting the register number.
> You can check the contents of registers using the REGISTER menu *(see page 7-11)*.

### Saving a snapshot

Use the following procedure to save a snapshot.

**1** Set the relevant section or sections of the control panel to the state you wish to save.

**2** Press the SNAP SHOT button, turning it on.

This delegates the numeric keypad block to snapshot operations.

**3** Select the sub-register section or sections. You can press any combination of the following buttons: M/E-1, M/E-2, DSK, USER, and ALL. Pressing the ALL button selects all sections, and lights the other four buttons.

*For details of the register sections, see page 6-2.*

**4** Press the STORE/LEARN button, turning it on.

The display shows the number of the last register saved.

**5** Use the numeric keypad to enter the register number (1 to 99) where you want to save the snapshot.
To use the first available empty register, enter a decimal point only.

The display shows the register number entered.
If the sub-register section or sections selected in step **3** are empty, a lower case 'e' appears after the register number indication. If all sub-register sections for the register are empty, an upper case 'E' appears.

**6** Press any combination of the following buttons to apply attributes as required. Note that GPI output attributes are applied from the REGISTER menu.
- +/-/EFF DIS button: Effect dissolve attribute
- CLR/AUTO TRANS button: Auto transition attribute
- TRIM/XPT DSBL button: Cross-point disable attribute

*For more details of these attributes, see page 6-3.*

If you have applied the effect dissolve attribute, the transition rate when carrying out a dissolve is determined as follows.
- For the M/E-1, M/E-2 and DSK blocks: the transition rate set for the corresponding block.
- For the "USER" group: the transition rate set for the M/E-1 block.

**7** Press the ENTER button.

The STORE/LEARN button goes off, and the snapshot is saved in memory.

# Snapshot Recall

There are two ways of recalling a snapshot: either by entering the register number using the numeric keypad or by using the buttons in the shot box block for instant recall.

### Using the numeric keypad

Use the following procedure to recall a snapshot using the numeric keypad.

**1** Press the SNAP SHOT button, turning it on.

This delegates the numeric keypad block to snapshot operations.

**2** Select the sub-register section or sections. You can press any combination of the buttons.

*For more details, see "Saving a snapshot" (page 6-4).*

**3** Press the RCALL button, turning it on.

The display shows the number of the last register recalled.

**4** Use the numeric keypad to enter the register number from which you want to recall the snapshot.

The display shows the register number entered. If attributes are applied to the selected sub-register sections, the corresponding buttons in the numeric keypad section light.
For example, if the auto transition attribute is applied to the M/E-1 block, and the cross-point disable attribute to the M/E-2 block, the CLR/AUTO TRANS and TRIM/XPT buttons both light.

**5** To apply an attribute, press the corresponding button in the numeric keypad section. Equally, to remove an attribute already applied, press the button, turning it off.

**6** Press the ENTER button.

This recalls the specified snapshot, restoring the relevant sections of the control panel to their states when the snapshot was saved. This only affects settings relating to the video state, however, and does not change the currently displayed menu, for example. After recalling the snapshot, the RCALL button remains on, and you can select a different snapshot immediately by repeating the procedure from step **4**.

# Chapter 7
# Registers

# Overview

## Register Organization

Registers are areas of memory (RAM) used to hold snapshots and key frame effects; there are 99 registers for each of these purposes, numbered 1 to 99.

Each register consists of sub-registers, as shown in the illustration below, each sub-register containing the information for a different section of the switcher operations.

The sections indicated as the "USER" group of sections or sub-registers are saved and recalled together, using the USER button.



Registers 1 to 99

Sub-register sections

| M/E-1 |
| M/E-2 |
| DSK |
| Color background 1 |
| Color background 2 |
| Chroma key a) |
| Frame memory 1 |
| Frame memory 2 |
| Auxiliary bus block |

"USER" group b)

**Snapshot registers**

Registers 1 to 99

Sub-register sections

| M/E-1 |
| M/E-2 |
| DSK |
| Color background |
| Chroma key |
| Frame memory |
| Auxiliary bus block |

"USER" group c)

**Key frame effect registers**

a) For D1 systems, there are two chroma key sections, i.e. chroma key 1 and chroma key 2.

b) For the snapshot registers, you can select the USER button to control any subset of these sub-register sections.

c) For the key frame effect registers, the USER button always controls the same set of sub-register sections.

Registers and sub-register sections

# Functions Relating to Registers

## Listing the registers

It is possible to display a list of either the snapshot registers or the key frame effect registers.
The display provides the following information about each of the registers.

*For details of the register display, see page 7-11.*

**Registers used:** The displays shows which registers contain data ("*") and which are empty ("–").

**Attributes:** The snapshot registers can have a number of different attributes, indicated by the following abbreviations.
D: Effect dissolve
T: Auto transition
X: Cross-point disable
1 to 8: GPI attributes

*For details of the attributes, see the section "Snapshot attributes," page 6-3.*

**Register names:** By default, the registers are named either "EFFECT" or "SNAPSHOT". You can use the NAME function to change these to any desired names.

## Register manipulation functions

The following functions are provided to manipulate the data within registers.

It is not possible to apply these to separate sub-registers.

COPY: Copy the contents of one register to another.

SWAP: Swap the contents of two registers.

MOVE: Move the contents of one register to another.

MERGE: Merge the contents of two registers. This function can only be used for key frame effect registers.

DELETE: Delete the contents of a register.

NAME: Assign a name to a register.

You can also apply the COPY, SWAP, MOVE and DELETE functions to contiguous blocks of registers.

## Setting the attributes — ATTRIB EDIT

It is possible to change the attributes applied when registers are saved or recalled, and also to apply GPI attributes.

## Selecting the sub-register sections in the "USER" group — CONFIG USER

For the snapshot registers, you can select which of the sub-register sections in the "USER" group (color background, chroma key, frame memory and auxiliary bus block) the USER button controls. Regardless of this setting, for the register manipulation functions, the USER button always controls all of the indicated sub-register sections.

For the key frame effect registers, the USER button always controls the same sub-register sections.

## Changing the attributes

Except for the GPI attributes, snapshot attributes are applied when registers are saved or recalled. Use the following procedure to change the attributes. This procedure is useful when setting "USER" group attributes individually.

**1** In the REGISTER menu, select item 3 (ATTRIB EDIT).

The cursor appears on the list of registers, and the function key indications change.

**2** Use the [↑], [↓], [←] and [→] buttons to align the cursor on the attribute for sub-register you wish to change.

The function key indications change, depending on the sub-register on which the cursor is positioned.

**3** Press a function key to change the appropriate attributes.

## Applying GPI attributes

Use the following procedure to apply GPI attributes to a snapshot.

**1** In the REGISTER menu, select item 3 (ATTRIB EDIT).

The cursor appears on the list of registers, and the function key indications change.

**2** Use the [↑], [↓], [←] and [→] buttons to align the cursor on the GPI item for the sub-register you wish to change.

The function key indications for applying GPI attributes appear.

**3** Press one of F1 through F8, to select the GPI "BOX" number required.

**To disable the setting**
Press F9 (OFF).

### Selecting the sub-register sections controlled by the USER button

Use the following procedure to change the subset of the "USER" group controlled by the USER button.

**1** In the REGISTER menu, select item 4 (CONFIG USER).

The function key indications change to show the sub-register sections.

**2** Use F1 to F7 to select the sub-register section or sections controlled by the USER button. Pressing each of the F1 through F4 buttons toggles it between reverse video and normal video. The sections selected are shown in reverse video.

**For D2 systems**
F1(COLRO BKGD 1): color background 1 section
F2(COLRO BKGD 2): color background 2 section
F3(CHR KEY): chroma key section
F4(FRAME MEM 1): frame memory 1 section
F5(FRAME MEM 2): frame memory 2 section
F6(AUX BUS): auxiliary bus block section

**For D1 systems**
F1(COLRO BKGD 1): color background 1 section
F2(COLRO BKGD 2): color background 2 section
F3(CHR KEY 1): chroma key 1 section
F4(CHR KEY 2): chroma key 2 section
F5(FRAME MEM 1): frame memory 1 section
F6(FRAME MEM 2): frame memory 2 section
F7(AUX BUS): auxiliary bus block section

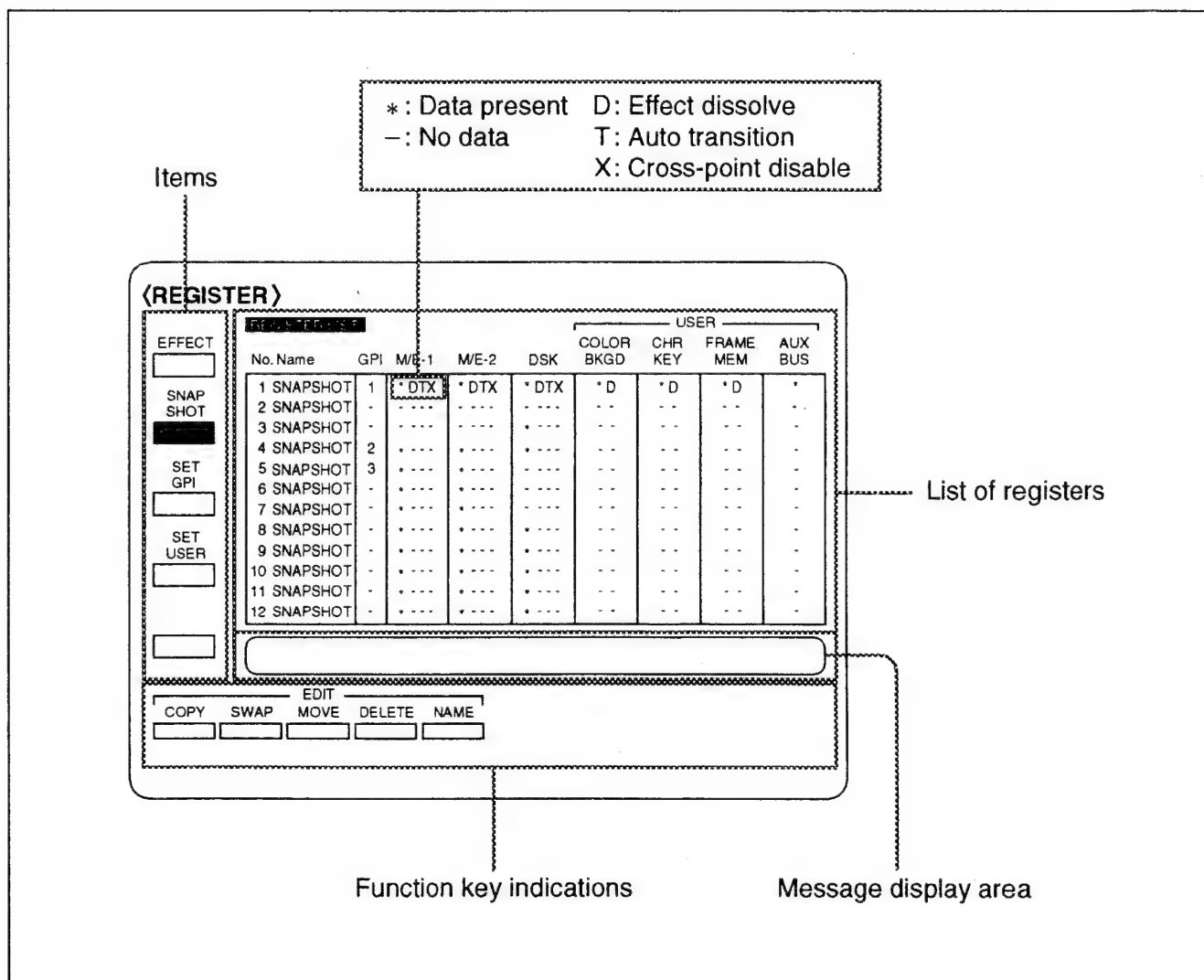It is now possible to control the sub-register section or sections shown in reverse video by the USER button.

# REGISTER Menu Display and Settings

## Example REGISTER menu display

Pressing the REGS button in the top menu section displays the REGISTER menu, as shown below.

Use this example display in combination with the table on the following pages for reference when making the settings.



Example REGISTER menu display

## Settings in the REGISTER menu

To identify the positions of the items listed in this table, see the illustration on the previous page.

Settings in the REGISTER menu

| Item | Function keys indications and functions | | | | Setting operation |
|---|---|---|---|---|---|
| 1:<br>EFFECT a) | Initial screen | EDIT | F1: COPY | Copy a key frame effect from one register to another. It is also possible to copy the data in a contiguous block of registers. | Press one of the buttons, switching it to reverse video, then select from F7 to F9. |
| | | | F2: SWAP | Swap the key frame effects in two registers. It is also possible to swap the data in two contiguous blocks of registers. | |
| | | | F3: MOVE | Move a key frame effect from one register to another. It is also possible to move the data in a contiguous block of registers. | |
| | | | F4: MERGE | Merge two key frame effects. | |
| | | | F5: DELETE | Delete a key frame effect. It is also possible to delete the data in a contiguous block of registers, or the data in all registers. | |
| | | | F6: NAME | Assign a name to a register. | |
| | | REGISTER SELECT b) | F7: ALL | Specify all registers. This only appears when you selected F5 (DELETE). | Press one of the buttons, switching it to reverse video, and enter the register numbers when prompted. When input is complete, press F10 (EXEC). |
| | | | F8: BLOCK | Specify a block of contiguous registers. | |
| | | | F9: ONE | Specify one register. | |
| | | F10: EXEC | | Display the confirmation screen. | — |

a) Requires the optional BKDS-6050 key frame control panel to be fitted.
b) The indications for F7 through F9 depend on the selection made with F1 through F6.

Settings in the REGISTER menu

| Item | | Function keys indications and functions | | | Setting operation |
|------|---|-----------------------------------------|---|---|-------------------|
| 1:<br>EFFECT [a)] | Confirmation screen | F9: YES | | Confirm execution. | Press one of these buttons.<br>When assigning a register name, continue with further input. *For details of the input method, see page 3-7.* |
| | | F10: NO | | Abandon execution. | |
| 2: SNAP SHOT | Initial screen | EDIT | F1: COPY | Copy a snapshot from one register to another. It is also possible to copy the data in a contiguous block of registers. | Press one of the buttons, switching it to reverse video, then select from F7 to F9. |
| | | | F2: SWAP | Swap the snapshots in two registers. It is also possible to swap the data in two contiguous blocks of registers. | |
| | | | F3: MOVE | Move a snapshot from one register to another. It is also possible to move the data in a contiguous block of registers. | |
| | | | F4: DELETE | Delete a snapshot. It is also possible to delete the data in a contiguous block of registers, or the data in all registers. | |
| | | | F5: NAME | Assign a name to a register. | |
| | | REGISTER SELECT [b)] | F7: ALL | Specify all registers. This only appears when you selected F4 (DELETE). | Press one of the buttons, switching it to reverse video, and enter the register numbers when prompted.<br>When input is complete, press F10 (EXEC). |
| | | | F8: BLOCK | Specify a block of contiguous registers. | |
| | | | F9: ONE | Specify one register. | |
| | | F10: EXEC | | Display the confirmation screen. | — |

a) Requires the optional BKDS-6050 key frame control panel to be fitted.
b) The indications for F7 through F9 depend on the selection made with F1 through F5.

*(Continued)*

Settings in the REGISTER menu (Continued)

| Item | Function keys indications and functions | | | Setting operation |
|---|---|---|---|---|
| 2: SNAP SHOT | Confirmation screen | F9: YES | Confirm execution. | Press one of these buttons. When assigning a register name, continue with further input. *For details of the input method, see page 3-7.* |
| | | F10: NO | Abandon execution. | |
| 3: ATTRIB EDIT | When the cursor is on GPI | | | Use the [↑] [↓] [←] [→] buttons to align the cursor before making the setting. The function key indications depend on the position of the cursor. *See page 7-9 for details of settings.* |
| | GPI OUTPUT BOX NO. | F1: BOX 1 | Select the GPI "BOX" number required. To disable a setting, press F9 (OFF). | |
| | | F2: BOX 2 | | |
| | | F3: BOX 3 | | |
| | | F4: BOX 4 | | |
| | | F5: BOX 5 | | |
| | | F6: BOX 6 | | |
| | | F7: BOX 7 | | |
| | | F8: BOX 8 | | |
| | | F9: OFF | | |
| | When the cursor is on M/E-1 | | | |
| | M/E-1 ATTRIBUTE | F3: EFF DISS | Set the attributes for the M/E-1 sub-register. | |
| | | F4: AUTO TRANS | | |
| | | F5: XPT DISABLE | | |
| | When the cursor is on M/E-2 | | | |
| | M/E-2 ATTRIBUTE | F3: EFF DISS | Set the attributes for the M/E-2 sub-register. | |
| | | F4: AUTO TRANS | | |
| | | F5: XPT DISABLE | | |

Settings in the REGISTER menu (Continued)

| Item | Function keys indications and functions | | | Setting operation |
|---|---|---|---|---|
| 3: ATTRIB EDIT | When the cursor {s on DSK | | | Use the [↑] [↓] [←] [→] buttons to align the cursor before making the setting. The function key indications depend on the position of the cursor. *See page 7-9 for details of settings.* |
| | DSK ATTRIBUTE | F3: EFF DISS | Set the attributes for the DSK sub-register. | |
| | | F4: AUTO TRANS | | |
| | | F5: XPT DISABLE | | |
| | When the cursor is on COLOR BKGD | | | |
| | EFF DISS | F3: COLOR BKGD 1 | Set the attributes for COLOR BKGD 1 and COLOR BKGD 2. | |
| | | F5: COLOR BKGD 2 | | |
| | When the cursor is on CHR KEY | | | |
| | EFF DISS | F3: CHR KEY 1 [b] | Set the attributes for CHR KEY. | |
| | | F4: CHR KEY [a] | | |
| | | F5: CHR KEY 2 [b] | | |
| | When the cursor is on AUX | | | |
| | XPT DISABLE | F1: AUX 1 | Set the attributes for the AUX bus. | |
| | | F2: AUX 2 | | |
| | | F3: AUX 3 | | |
| | | F4: AUX 4 | | |
| | | F5: AUX 5 | | |
| | | F6: AUX 6 | | |

a) For D2 systems.
b) For D1 systems.

*(Continued)*

# Basic Register Operations and the REGISTER Menu

Settings in the REGISTER menu (Continued)

| Item | Function keys indications and functions | | Setting operation |
|---|---|---|---|
| 4: CONFIG USER | For D1 systems | | Select the sub-register section or sections ("REGION") to be included in the "USER" group. |
| | USER REGION | F1: COLOR BKGD 1 | The selected sub-register sections are shown in reverse video. |
| | | F2: COLOR BKGD 2 | |
| | | F3: CHR KEY 1 | |
| | | F4: CHR KEY 2 | |
| | | F5: FRAME MEM 1 | |
| | | F6: FRAME MEM 2 | |
| | | F7: AUX BUS | |
| | For D2 systems | | |
| | USER REGION | F1: COLOR BKGD 1 | |
| | | F2: COLOR BKGD 2 | |
| | | F3: CHR KEY | |
| | | F4: FRAME MEM 1 | |
| | | F5: FRAME MEM 2 | |
| | | F6: AUX BUS | |

# Disk Operations

The following disk operations are provided by the system.

**SAVE:** Transferring register contents or the current setup data to files on the floppy disk. One floppy disk can hold 99 key frame effect register files, 99 snapshot register files, and 4 setup data files.

**LOAD:** Loading data from the floppy disk. A key frame effect or snapshot file is loaded into a register, whereas loading a setup data file sets up the system according to the settings in that file.

**DELETE:** Deleting a file.

**COPY:** Copying a file on the same disk.

**RENAME:** Attaching a name to a file on the disk.

**FORMAT:** Formatting a disk for use.

**LABEL:** Attaching a label to the disk.

The SAVE, LOAD, DELETE and COPY functions can also be applied to a block of consecutive key frame effect or snapshot files.

# Basic Disk Operations and the DISK Menu

This section describes basic disk operations and the DISK menu.

## Basic Disk Operations

Disk operations are carried out from the DISK menu.
This section describes the operation of the SAVE, LOAD, RENAME and FORMAT functions, and the procedures for ejecting a disk.
- For the DELETE, and COPY functions, the procedure is analogous to that for the SAVE function.
- For the LABEL function, the procedure is analogous to that for the RENAME function.

The following procedures assume that a disk is already present in the disk drive.

### Saving register contents to a disk

Use the following procedure to save snapshot register contents to a disk. You can also use the same procedure, with the necessary changes having been made, for key frame effect register saving.

**1** Press the DISK button in the top menu section.

The DISK menu appears.

*For an example of the menu display, see page 8-11.*

**2** Select item 2 (SNAP SHOT).

This displays the list of snapshot registers, and the list of files on the disk.
Use the cursor keys ([↑][↓][←][→]) to scroll both of the lists.

**3** Press F1 (SAVE), turning it to reverse video.

The function key indications for F7 to F10 appear.

**4** Press one of F7 to F9, turning it to reverse video.
- F7 (ALL): Save the data in all registers.
  In this case the file numbers correspond to the register numbers.
- F8 (BLOCK): Save a block of contiguous registers.
- F9 (ONE): Save a single register.

If you pressed F7, proceed to step **7**.
If you pressed F8 or F9, proceed to step **5**. On the menu display, "FROM" and "TO" indications appear, and the current input position turns to reverse video.

**5** Enter the number of the register to be saved, using the numeric keypad, and press the ENTER button.
If in step **4** you pressed the F8 (BLOCK) button, enter the numbers of the first and last registers in the block of registers to be saved. For example, to save registers 10 to 20, enter 10, then at the next position in reverse video, enter 20.

**6** Enter the file number (1 to 99) in which you wish to save the register, using the numeric keypad, and press the ENTER button.
If saving a block of registers, enter the first file number.

**7** Press the F10 (EXEC) button.

The function key indications change.

**8** To carry out the save, press the F9 (YES) button, and to abandon the save, press the F10 (NO) button.

Once the saving to disk begins, the function key indications change, and F10 (BREAK) appears. Pressing F10 forcibly abandons the file saving.

## Loading register contents from a disk

Use the following procedure to load snapshot file contents from a disk. You can also use the same procedure, with the necessary changes having been made, for key frame effect file loading.

**1** In the DISK menu, select item 2 (SNAP SHOT).

This displays the list of snapshot registers, and the list of files on the disk.

**2** Press F2 (LOAD), turning it to reverse video.

The function key indications for F7 to F10 appear.
Use the cursor keys ([↑][↓][←][→]) to scroll both of the lists.

**3** Press one of F7 to F9, turning it to reverse video.
- F7 (ALL): Load the data in all files into registers.
  In this case the files are loaded into the registers with the corresponding numbers.
- F8 (BLOCK): Load a block of contiguous files into registers.
- F9 (ONE): Load a single file into a register.

If you pressed F7, proceed to step **6**.
If you pressed F8 or F9, proceed to step **4**. On the menu display, "FROM" and "TO" indications appear, and the current input position for a file number turns to reverse video.

**4** Enter the number of the file to be loaded, using the numeric keypad, and press the ENTER button.
If in step **3** you pressed the F8 (BLOCK) button, enter the numbers of the first and last files in the block of files to be loaded. For example, to load files 10 to 20, enter 10, then at the next position in reverse video, enter 20.

**5** Enter the register number (1 to 99) in which you wish to load the file, using the numeric keypad, and press the ENTER button.
If loading a block of files, enter the first register number.

**6** Press the F10 (EXEC) button.

The function key indications change.

**7** To carry out the load, press the F9 (YES) button, and to abandon the load, press the F10 (NO) button.

Once the loading from disk begins, the function key indications change, and F10 (BREAK) appears. Pressing F10 forcibly abandons the file loading.

## Saving setup data to a disk

Use the following procedure to save the current setup data to a disk.

**1** In the DISK menu, select item 3 (SETUP).

This displays a list of files on the disk.

**2** Press F1 (SAVE), turning it to reverse video.

On the menu display, "FROM" and "TO" indications appear, and the current input position for a file number turns to reverse video. The "FROM" indication automatically shows the legend "SETUP", indicating a save from the current settings.

**3** Enter the file number (1 to 4) in which you wish to save the current setup data, using the numeric keypad, and press the ENTER button.

**4** Press the F10 (EXEC) button.

The function key indications change.

**5** To carry out the save, press the F9 (YES) button, and to abandon the save, press the F10 (NO) button.

Once the saving to disk begins, the function key indications change, and F10 (BREAK) appears. Pressing F10 forcibly abandons the file saving.

# Basic Disk Operations and the DISK Menu

## Loading setup data from a disk

Use the following procedure to load setup data saved in a file from a disk.

**1** In the DISK menu, select item 3 (SETUP).

This displays the list of files on the disk.

**2** Press F1 (LOAD), turning it to reverse video.

On the menu display, "FROM" and "TO" indications appear, and the current input position for a file number turns to reverse video. The "TO" indication automatically shows the legend "SETUP".

**3** Enter the number of the file (1 to 4) to be loaded, using the numeric keypad, and press the ENTER button.

**4** Press the F10 (EXEC) button.

The function key indications change.

**5** To carry out the load, press the F9 (YES) button, and to abandon the load, press the F10 (NO) button.

Once the loading from disk begins, the function key indications change, and F10 (BREAK) appears. Pressing F10 forcibly abandons the file loading.

## Attaching a name to a file on the disk

Use the following procedure to attach a name to a snapshot file on the disk.

Subject to necessary changes, you can also use the same procedure for key frame effect and setup data files.

**1** In the DISK menu, select item 2 (SNAP SHOT).

**2** Press F5 (RENAME), turning it to reverse video.

**3** Enter the number of the file to which you wish to attach the name, using the numeric keypad, and press the ENTER button.

**4** Press F10 (EXEC).

The function key indications change.

**5** Press the F9 (YES) button.

It is now possible to enter the name for the file.

**6** Using the buttons in the shot box block and the numeric keypad, enter the name, of not more than eight alphanumeric characters, then press the F10 (ENTER) button.

The name is now attached to the file.

*For details of the input method, see page 3-7.*

# Basic Disk Operations and the DISK Menu

### Formatting a disk

Use the following procedure to format the disk currently in the floppy disk drive.

> **Note**
>
> Formatting a disk erases any existing data from it. Check carefully that existing data is not required before reformatting a disk which you have previously used.

**1** In the DISK menu, press the SHIFT button to interchange the function key indications, then press F1, turning F11 (FORMAT) to reverse video.
You can still carry out the formatting even after selecting item 1 (EFFECT), item 2 (SNAP SHOT) or item 3 (SETUP). The procedure is the same.

**2** Press F10 (EXEC).

The function key indications change.

**3** To carry out the formatting, press the F9 (YES) button, and to abandon the formatting, press the F10 (NO) button.

Once the formatting begins, the function key indications change, and F10 (BREAK) appears. Pressing F10 forcibly abandons the disk formatting.

### Ejecting a disk

#### Normal eject

To eject the disk from the floppy disk drive, in the DISK menu, select item 5 (EJECT).
This immediately ejects the disk.

#### Emergency eject

If it is not possible to eject the disk normally, insert a pointed object in the small hole below and to the right of the floppy disk drive, and press.

# DISK Menu display and Settings

## Example DISK menu display

Pressing the DISK button in the top menu section displays the DISK menu, as shown below.
Use this example display in combination with the table on the following pages for reference when making the settings.



Example DISK menu display

## Settings in the DSK menu

To identify the positions of the items listed in this table, see the illustration on the previous page.

Settings in the DISK menu

| Item | Function key indications and functions | | Setting operation |
|------|---|---|---|
| 1: EFFECT [a] | Initial screen | F1: SAVE | Save the contents of a key frame effect register to the floppy disk. It is also possible to save the contents of a contiguous block of registers. | Press one of the buttons, switching it to reverse video, then select from F7 to F9. |
| | | F2: LOAD | Load a key frame effect register from a file on the floppy disk. It is also possible to load a contiguous block of files. | |
| | | F3: DELETE | Delete a key frame effect file on the floppy disk. It is also possible to delete a contiguous block of files or all of the files in a single operation. | |
| | | F4: COPY | Copy a key frame effect file on the same disk. It is also possible to copy a contiguous block of files. | |
| | | F5: RENAME | Attach a name to a key frame effect file on the disk. | |
| | | F7: ALL [b] | Specify all registers or files. | Press one of the buttons, switching it to reverse video, and enter the register numbers or file numbers when prompted. When input is complete, press F10 (EXEC). |
| | | F8: BLOCK [b] | Specify a block of contiguous registers or files. | |
| | | F9: ONE [b] | Specify one register or file. | |
| | | F10: EXEC | Display the confirmation screen. | — |

a) Requires the optional BKDS-6050 key frame control panel to be fitted.
b) The indications for F7 through F9 depend on the selection made with F1 through F5.

Settings in the DISK menu

| Item | | Function key indications and functions | | Setting operation |
|---|---|---|---|---|
| 1: EFFECT [a] | Initial screen | F11: FORMAT | Format a disk for use. | Press the SHIFT button to interchange the function key indications, then press one of F1 and F2, switching it to reverse video, then press F10. |
| | | F12: LABEL | Attach a label to the disk. | |
| | Confirmation screen | F9: YES | Confirm execution. | Press one of these buttons. When assigning a file or disk name, continue with further input. *For details of the input method, see page 3-7.* |
| | | F10: NO | Abandon execution. | |
| 2: SNAP SHOT | Initial screen | F1: SAVE | Save the contents of a snapshot register to the floppy disk. It is also possible to save the contents of a contiguous block of registers. | Press one of the buttons, switching it to reverse video, then select from F7 to F9. |
| | | F2: LOAD | Load a snapshot register from a file on the floppy disk. It is also possible to load a contiguous block of files. | |
| | | F3: DELETE | Delete a snapshot file on the floppy disk. It is also possible to delete a contiguous block of files or all of the files in a single operation. | |
| | | F4: COPY | Copy a snapshot file on the same disk. It is also possible to copy a contiguous block of files. | |
| | | F5: RENAME | Attach a name to a snapshot file on the disk. | |

a) Requires the optional BKDS-6050 key frame control panel to be fitted.

*(Continued)*

Settings in the DISK menu (Continued)

| Item | | Function key indications and functions | | Setting operation |
|------|------|------|------|------|
| 2: SNAP SHOT | Initial screen | F7: ALL [a) | Specify all registers or files. | Press one of the buttons, switching it to reverse video, and enter the register numbers or file numbers when prompted. When input is complete, press F10. |
| | | F8: BLOCK [a) | Specify a block of contiguous registers or files. | |
| | | F9: ONE [a) | Specify one register or file. | |
| | | F10: EXEC | Display the confirmation screen. | — |
| | | F11: FORMAT | Format a disk for use. | Press the SHIFT button to interchange the function key indications, then press one of F1 and F2, switching it to reverse video, then press F10. |
| | | F12: LABEL | Attach a label to the disk. | |
| | Confirmation screen | F9: YES | Confirm execution. | Press one of these buttons. When assigning a file or disk name, continue with further input. *For details of the input method, see page 3-7.* |
| | | F10: NO | Abandon execution. | |
| 3: SETUP | Initial screen | F1: SAVE | Save the current system settings to the floppy disk. | Press one of the buttons, switching it to reverse video, then select from F7 to F9. |
| | | F2: LOAD | Load a setup data file from the floppy disk. | |
| | | F3: DELETE | Delete a setup data file on the floppy disk. | |
| | | F4: COPY | Copy a setup data file on the same disk. | |
| | | F5: RENAME | Attach a name to a setup data file on the disk. | |

a) The indications for F7 through F9 depend on the selection made with F1 through F5.

Settings in the DISK menu

| Item | Function key indications and functions | | Setting operation |
|---|---|---|---|
| 3: SETUP | **Initial screen** F7: ALL [a)] | Specify all files. | Press one of the buttons, switching it to reverse video, and enter the register numbers or file numbers when prompted. When input is complete, press F10. |
| | F8: BLOCK [a)] | Specify a block of contiguous files. | |
| | F9: ONE [a)] | Specify a file. | |
| | F10: EXEC | Display the confirmation screen. | — |
| | F11: FORMAT | Format a disk for use. | Press the SHIFT buttons to interchange the function key indications, then press one of F1 and F2, switching it to reverse video, then press F10. |
| | F12: LABEL | Attach a label to the disk. | |
| | **Confirmation screen** F9: YES | Confirm execution. | Press one of these buttons. When assigning a file or disk name, continue with further input. *For details of the input method, see page 3-7.* |
| | F10: NO | Abandon execution. | |
| 5: EJECT | Pressing the item selection button immediately ejects the floppy disk. | | — |

a) The indications for F7 through F9 only appear when you selected F3 (DELETE).

# Chapter 9
# Copy and Swap Functions

# Overview

These functions allow you to copy the settings from one M/E block to another, or from one keyer to another. The swap function allows you to interchange two sets of settings, in place of a one-directional copy. It is also possible to copy matte colors and wipe settings.

## Settings Which can be Copied or Swapped

The following are the settings which can be copied or swapped.

**M/E-1 and M/E-2 settings:** You can copy or swap the entire settings on the M/E-1 and M/E-2 blocks.
This excludes, however, the key memory and setup data.

**Keyer settings:** You can copy or swap settings between any two of the keyers, as follows.
- M/E-1 key 1
- M/E-1 key 2
- M/E-2 key 1
- M/E-2 key 2

This excludes, however, the key memory and setup data.

**Matte settings:** There are a total of 16 internally generated mattes, which you can copy or swap.
The following is a complete list of the mattes:
- M/E-1 block: wipe border, key 1 fill, key 1 edge, key 2 fill, key 2 edge.
- M/E-2 block: wipe border, key 1 fill, key 1 edge, key 2 fill, key 2 edge.
- Downstream keyer: key fill, key edge.
- Color background 1: matte 1, matte 2.
- Color background 2: matte 1, matte 2.

**Wipe settings:** You can copy or swap settings from any of the four following wipe generators.
- M/E-1 wipe
- M/E-2 wipe
- Color background 1 wipe
- Color background 2 wipe

Since some of the functions of the M/E wipe generators and color background wipe generators are different, only those settings which are applicable are copied.

**Chroma key settings (D1 systems only):** You can copy or swap the settings between the two chroma keyers.

# Basic Copy and Swap Operations and the COPY Menu

This section describes basic copy and swap operations and the COPY menu.

## Basic Copy and Swap Operations

Copy and swap operations can be carried out from the COPY menu, but simple button operations are also available for an M/E block copy, keyer copy, or wipe copy.

This section describes both the menu and button operations.

### Carrying out an M/E block copy or swap

Use the following procedure to carry out an M/E block copy or swap. See also the section "Carrying out an M/E block copy by button operation" (page 9-7).

**1** Press the COPY button in the top menu section.

The COPY menu appears.

*For an example of the menu display, see page 9-9.*

**2** Select item 1 (M/E).

The M/E block names (M/E-1 and M/E-2) appear below the "FROM" and "TO" indications, and the function key indications change to display among others the "COPY" and "SWAP" functions.

**3** For a copy operation, use the [↑] and [↓] keys to select the source block, which is shown in reverse video.
For a swap, no further selection is necessary.

The destination indication automatically shows the opposite M/E block from the source in reverse video.

**4** Using F6 (XPT DISABLE), select whether or not to preclude the cross-point button settings from the copy or snap. To preclude, turn F6 "ON" and not to, turn it "OFF".

**5** Press F10 (COPY) to carry out a copy, or F8 (SWAP) to carry out a swap.

This carries out the copy or swap operation.

### Undoing a copy or swap

Holding down the COPY button in the top menu section, press the LAST X button in the numeric keypad block.
This function can be used not only for an M/E block copy or snap, buto also for a keyer and a wipe copy or swap.

## Carrying out a keyer copy or swap

Use the following procedure to carry out a keyer copy or swap. See also the section "Carrying out a keyer copy by button operation" (page 9-7).

**1** In the COPY menu, select item 2 (KEYER).

The keyer names appear below the "FROM" and "TO" indications, and the function key indications change to display among others the "COPY" and "SWAP" functions.

**2** Press the [←] key, moving the cursor to the "FROM" indication.

**3** Use the [↑] and [↓] keys to align the cursor on the copy source keyer or one of the keyers to be swapped.

**4** Press the [→] key, moving the cursor to the "TO" indication.

**5** Use the [↑] and [↓] keys to align the cursor on the copy destination keyer.

**6** Using F6 (XPT DISABLE), select whether or not to preclude the cross-point button settings from the copy or snap. To preclude, turn F6 "ON" and not to, turn it "OFF".

**7** Press F10 (COPY) to carry out a copy, or F8 (SWAP) to carry out a swap.

This carries out the copy or swap operation.

# COPY Menu Display and Settings

## Example COPY menu display

Pressing the COPY button in the top menu section displays the COPY menu, as shown below.
Use this example display in combination with the table on the following pages for reference when making the settings.

Items

《 COPY 》

M/E

KEYER

MATTE

WIPE

CHROMA KEY

FROM
M/E-1
M/E-2

TO
M/E-1
M/E-2

XPT
DISABLE
ON

SWAP

COPY

Function key indications
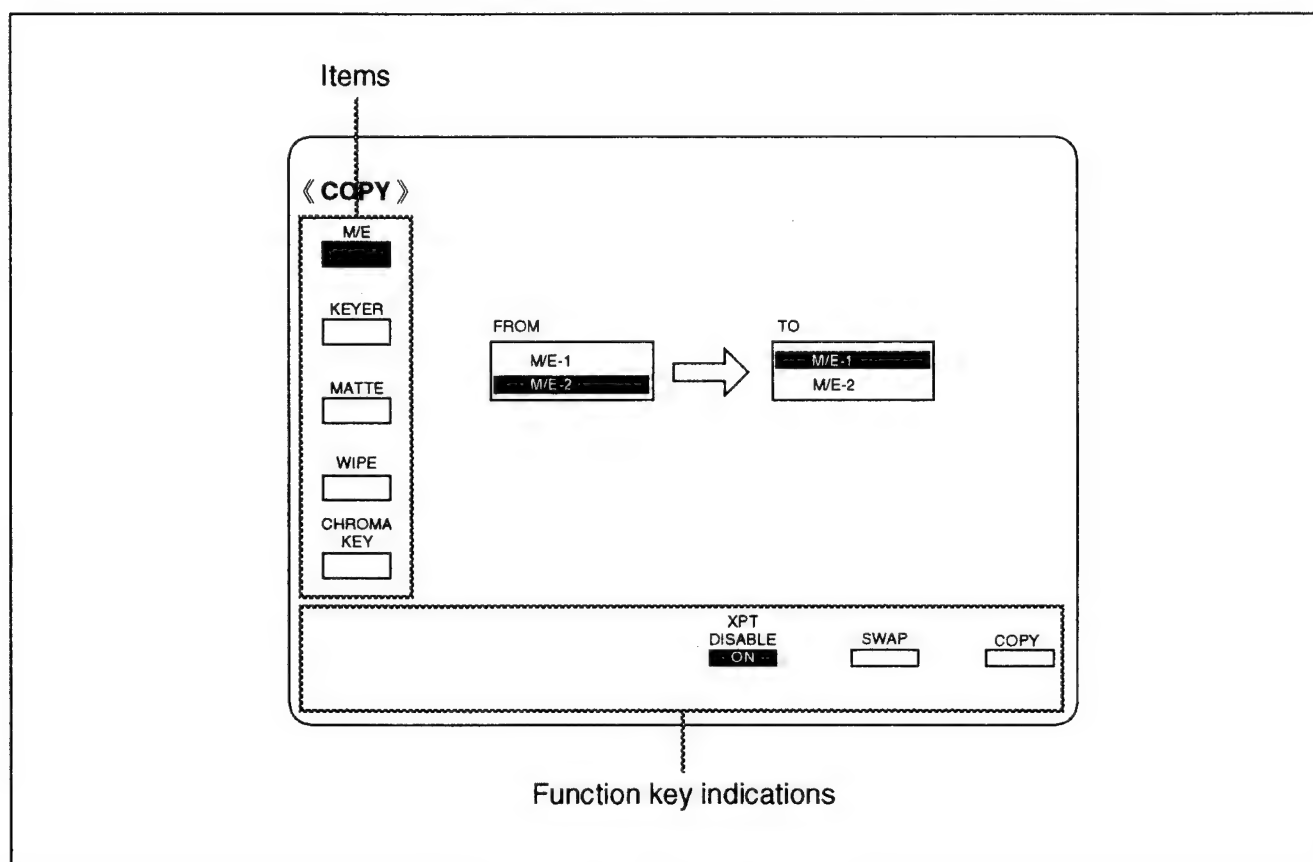
Example COPY menu display

# Basic Copy and Swap Operations and the COPY Menu

## Settings in the COPY menu

To identify the positions of the items listed in this table, see the illustration on the previous page.

Settings in the COPY menu

| Item | Function key indications and functions | | Setting operation |
|---|---|---|---|
| 1: M/E | F6: XPT DISABLE | Select whether or not to preclude the cross-point button settings from the copy or swap:<br>ON: preclude<br>OFF: do not preclude. | Press the button to toggle the selection. |
| | F8: SWAP | Swap the current settings of the M/E blocks. | For a copy operation only, use the [↑] and [↓] keys to select the source, then press F10. |
| | F10: COPY | Copy the current settings from one of the M/E blocks to the other. | |
| 2: KEYER | F6: XPT DISABLE | Select whether or not to preclude the cross-point button settings from the copy or swap:<br>ON: preclude<br>OFF: do not preclude. | Press the button to toggle the selection. |
| | F8: SWAP | Swap the settings of two keyers. | Use the [↑] [↓] [←] [→] keys to select the source and destination, then press one of these buttons. |
| | F10: COPY | Copy the current settings from one keyer to another. | |

Settings in the COPY menu

| Item | Function key indications and functions | | Setting operation |
|------|---------------------------------------|---|-------------------|
| 3: MATTE | F8: SWAP | Execute the matte swap. | Use the [↑] [↓] [←] [→] keys to position the cursor on the source and destination mattes, then press F8 or F10 to select. |
| | F10: COPY | Execute the matte copy. | |
| 4: WIPE | F8: SWAP | Execute the wipe swap. | Use the [↑] [↓] [←] [→] keys to position the cursor on the source and destination wipe generators, then press F8 or F10 to select. |
| | F10: COPY | Execute the wipe copy. | |
| 5: CHROMA KEY (D1 systems only) | F8: SWAP | Swap the current settings between the two chroma keyers. | For a copy operation only, use the [↑] and [↓] keys to select the source, then press F10. |
| | F10: COPY | Copy the current settings between the two chroma keyers. | |

# Chapter 10
# ENABLE Menu Operations

# Overview

This section describes the functions controlled from the ENABLE menu: enabling or disabling external devices, enabling or disabling the safe title display, and carrying out GPI operations.

**Note**

The port enable and safe title settings are saved as part of the setup data in EEPROM or on floppy disk. Therefore, when the system is powered on, it always powers up with the settings saved in EEPROM. Note that these settings are not saved as snapshot or "INITIAL PANEL" data.

## Enabling or Disabling External Devices

The item "ENABLE" in the ENABLE menu controls the enabling and disabling of external devices connected to the switcher.
This includes devices connected to the following connectors on the rear panel:

- EDITOR A (serial port)
- GPI (parallel port)
- DME 1 (serial port)
- DME 2 (serial port)

**Note**

The ENABLE menu settings relating to control of the auxiliary buses from the EDITOR A, DME 1 and DME 2 ports are effective only when "MANUAL" is selected in the SETUP menu (see page 11-21).

**5** Press F2 (TRIGGER TYPE) the required number of times, and select the trigger polarity.

Pressing F2 cycles through the four following possibilities.
⎍ :Trigger on the rising edge of an input pulse.
⎑ :Trigger on the falling edge of an input pulse.
✕ :Trigger when the input changes polarity.
NOP : No triggering by input pulse.

**6** Press F4 (REGION SELECT) to select the block (that is, M/E-1, M/E-2 and so forth) to which the setting applies.

To make the same setting for all blocks, press F5 (ALL).

**7** Press F9 (ACTION SELECT) the required number of times, and align the cursor with the action to be carried out when the trigger occurs.

*For the items which can be set for each block, see the table on the following page.*

**8** Press F7 (SELECT).

Select one of "S.S RECALL?", "EFF RECALL?" or "RECALL? & RUN", then enter the register number from the numeric keypad.

**9** Repeat steps **6** to **8** to set the oprations for each block on this input port.

## Relation between settings and blocks

Different blocks of the switcher support different settings for the operations which can be started by GPI input. The following table indicates which settings are possible.

| Operation \ Block | M/E-1 | M/E-2 | DSK | BKGD 1 BKGD 2 | CHR-1 CHR-2 | FMEM 1 FMEM 2 | AUX |
|---|---|---|---|---|---|---|---|
| CUT AUTO TRANS | ○ | ○ | ○ | × | × | × | × |
| FTB CUT FTB | × | × | ○ | × | × | × | × |
| FREEZE CLEAR LAST X | × | × | × | × | × | ○ | × |
| S.S RECALL EFF RECALL RECALL & RUN KF RUN KF STOP KF REWIND NO USE | These settings are possible for all blocks, but the blocks are not independent. For example, setting "S.S RECALL 10" on the M/E-1 block, and then setting "S.S RECALL 20" on the M/E-2 block automatically changes M/E-1 to "S.S RECALL 20". Similarly for key frame operations, setting "EFF RECALL 30" on the M/E-1 block and then setting "RUN" on the M/E-2 block automatically changes M/E-1 to "RUN". | | | | | | |

## Making the GPI output settings

Use the following procedure to make the GPI output settings.

**1** Press the SETUP button in the top menu section.

This displays the initial screen of the SETUP menu.

**2** Select item 4 (PERIPH).

The function key indications at the lower part of the screen change to indicate the settings for "PERIPH".

**3** Press F5 (GPI OUTPUT).

This displays the screen for GPI output settings.

**4** Press F1 (BOX SELECT) the required number of times, and align the cursor with the required GPI BOX number.

The term "GPI BOX" refers to a grouping of port numbers from which a pulse is output whenever a particular action occurs. There are 16 GPI BOX numbers, and any one BOX can contain up to 7 port numbers.

**5** Press F2 (ACTION).

A table of actions appears.

**6** Press F8 (ACTION SELECT) the required number of times, and align the cursor with the action to activate the GPI BOX selected in step **4**.

**7** Press F6 (SELECT).

This displays the action at the cursor position in the row for the BOX selected in step **4**.

**8** Press F4 (PORT NO.), to display a table of GPI output ports.

**9** Press F8 (PORT SELECT) the required number of times, and align the cursor with the port number to be entered in the BOX.

**10** Press F6 (SELECT).

The port number at the cursor position is displayed in reverse video. Carry out steps **9** and **10** in the same way to switch a port number which is shown in reverse video back to normal video.

**11** Repeat steps **9** and **10** until all the port numbers to be entered in the GPI BOX are shown in reverse video.

**12** Press F10 (PORT SETUP).

This displays an output pulse selection screen.

**13** Press F1 (PORT SELECT) the required number of times, and align the cursor with the port number for which the setting is to be made.

**14** Press F2 (TRIGGER TYPE) the required number of times, and select the output pulse polarity.

Pressing F2 cycles through the four following possibilities.

⊓ : When the trigger occurs, the relay contacts open, and then stay open for the pulse width specified in step **15**.

⊔ : When the trigger occurs, the relay contacts close, and then stay closed for the pulse width specified in step **15**.

✕ : When the trigger occurs, the relay contact state alternately switches between closed and open.

NOP : The trigger has no effect on the output.

**15** Press F4 (PULSE WIDTH), and adjust the pulse width using either knob 4 or the numeric keypad.

## Allocating functions to utility buttons

It is possible to allocate either a menu function (display only) or a command function (switching some setting on or off, for example) to each of the utility buttons 1 to 10 in the shot box block. It is not possible, however, to allocate parameters.

**1** Press the SETUP button in the top menu section.
This displays the initial screen of the SETUP menu.

**2** Select item 5 (UTILITY).

The function key indications at the lower part of the screen change to indicate the settings for "UTILITY".

**3** Press F3 (SHOT BOX).

This displays the screen for SHOT BOX settings.

**4** To allocate a menu display press F4 (SET MENU), and to allocate a command press F5 (SET COMMAND).

The ten utility buttons in the shot box block all flash.

**5** If you pressed F4 (SET MENU), display the required menu.

If you pressed F5 (SET COMMAND), press F8 (COMMAND SELECT), and align the cursor with the required command.

**6** Press the utility button for the allocation.

This completes the allocation and all the utility buttons in the shot box block go off.

# SETUP Menu Display and Settings

## Example SETUP Menu Display

Pressing the SETUP button in the top menu section displays the initial screen of the SETUP menu, as shown below.

Use this example display in combination with the table on the following pages for reference when making the settings.
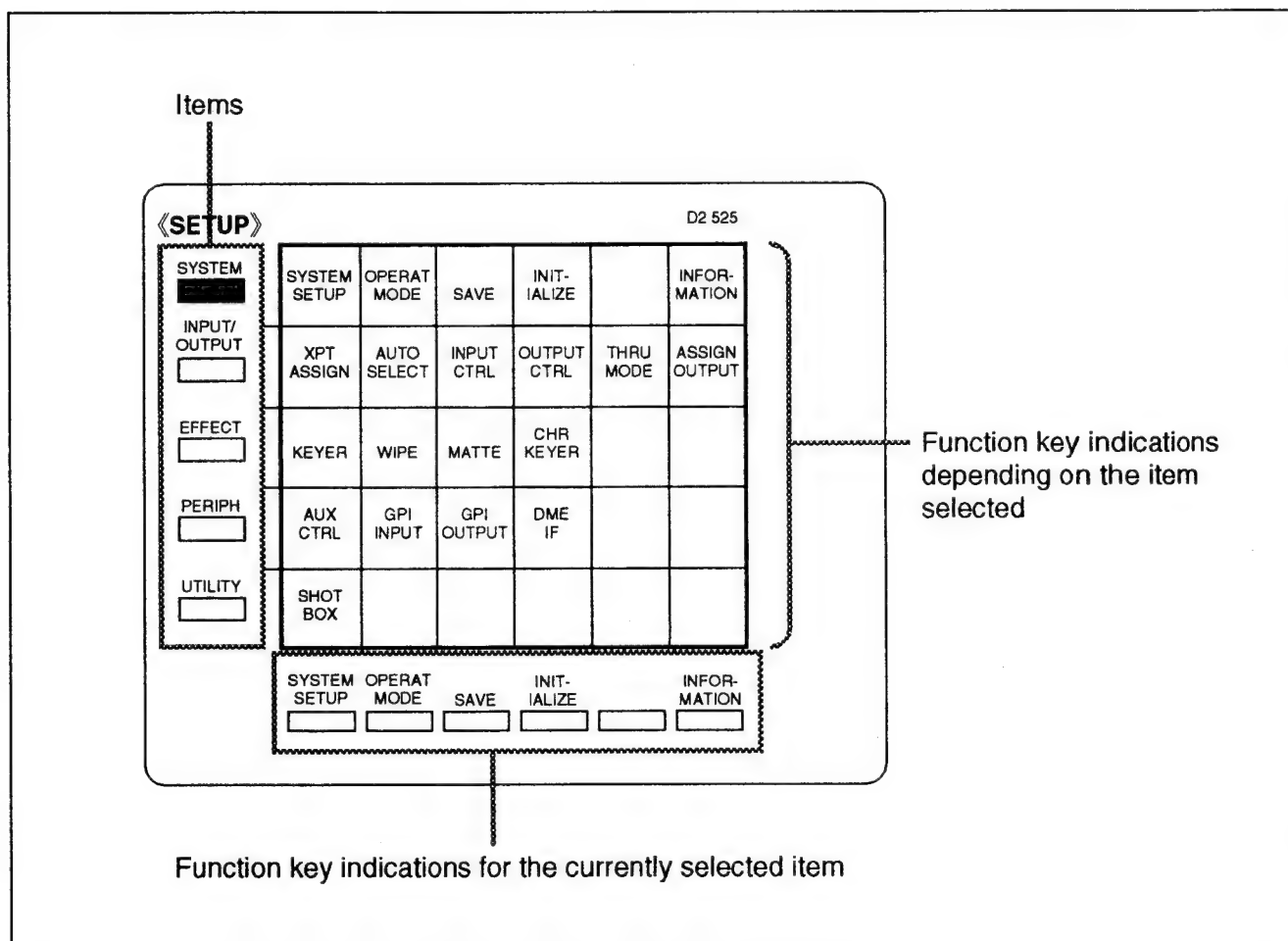


The initial screen of the SETUP menu

In the following descriptions, function keys are used to move the cursor, but it is also possible to use the cursor movement keys ( ↑, ↓, ←, and → ) in the SETUP menu.

# SETUP Menu Settings

SETUP menu item 1: SYSTEM

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 1: SYSTEM | F3: SYSTEM SETUP | F1: DATE | Set the current date. | Enter the current date in the format mm.dd.yyyy (e.g. 6.22.1992 for June 22, 1992) then press the ENTER button. |
| | | F2: TIME | Set the current time. | Enter the current time in the format hh.mm.ss (e.g. 14.25.20 for 14:25:20) then press the ENTER button. |
| | | F3: BEEPER | Enable/disable beeper. | Press the function key to toggle the beeper on or off. |
| | | F4: PW ON MODE | Set power on mode. | Press the function key to toggle between the FCTRY and USER settings. FCTRY: Restore factory settings at power on. USER: Use the user settings saved using F2 (INITIAL PANEL) in the F5 (SAVE) menu *(see page 11-13)*. |
| | | F5: SWITCH TIMING | Select the field on which switcher switches. | D2 systems: Pressing the function key cycles through the seven settings. ANY/EVEN/ODD/FIRST/SECOND/THIRD/FOURTH |
| | | | | D1 systems: Pressing the function key cycles through the three settings. ANY/EVEN/ODD |
| | | F6: SCREEN SAVER | To prevent burn-in on the control panel display, if a set time elapses with no user operation, the menu display is automatically cleared. | Pressing the function key cycles through the settings. OFF: function disabled. 1: screen cleared if no operation for 1 minute. 3: screen cleared if no operation for 3 minutes. 5: screen cleared if no operation for 5 minutes. 10: screen cleared if no operation for 10 minutes. |

SETUP menu item 1: SYSTEM

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 1: SYSTEM | F3: SYSTEM SETUP | F7:SCREEN FORMAT (D1 only) | Switch to wide screen (16:9 aspect ratio). | Press the function key to toggle the aspect ratio between 16:9 and 4:3. |
| | F4: OPERAT MODE | F1:BUS TOGGLE | Select mix/effects bus transition mode. *(See page 4-25).* | Press the function key to toggle the flip-flop mode on or off. ON: Flip-flop mode OFF: AB bus fixed mode |
| | | F2:FADE TO BLACK | Enable or disable the fade to black function. *(See page 4-13).* | Press the function key to toggle the fade to black function on or off. ENBL: On DSBL: Off |

*(Continued)*

SETUP menu item 1: SYSTEM

| Item | Function key | Function keys in submenu | | | Setting operation and settings |
|---|---|---|---|---|---|
| 1: SYSTEM | F4: OPERAT MODE | F3: DSK AUTO DROP | Enable or disable the function forcibly cutting the downstream key in a background transition. | | Press the function key to toggle on or off. |
| | | SAFE TITLE *(see page 10-3)* | F4: PGM BOX | Enable or disable the safe title box applied to program output. | Press the function key to toggle the safe title box on or off. When enabled, you can adjust the size of the box (integral value from 0 to 100) using knob 4 or the numeric keypad. |
| | | | F5: PGM CROSS | Enable or disable the safe title cross applied to program output. | Press the function key to toggle the safe title cross on or off. |
| | | | F6: PVW BOX | Enable or disable the safe title box applied to edit preview output. | Press the function key to toggle the safe title box on or off. When enabled, you can adjust the size of the box (integral value from 0 to 100) using knob 4 or the numeric keypad. |
| | | | F7: PVW CROSS | Enable or disable the safe title cross applied to edit preview output. | Press the function key to toggle the safe title cross on or off. |
| | | PVW SELECT[a] | F8: M/E-1 | Switch between M/E-1 PVW output and M/E-1 KEY output. | Press the function key to toggled between PVW and KEY output. |
| | | | F9: M/E-2 | Switch between M/E-2 PVW output and M/E-2 KEY output. | |
| | F5: SAVE | SAVE | F1: SETUP *(see page 11-3)* | Save current setup data to non-volatile memory. | Set up the required state, then press either F1 or F2 to select the data to be written, followed by F10 to carry out the operation. |
| | | | F2: INITIAL PANEL *(see page 11-12)* | When F4 (PW ON MODE) in the F3 (SYSTEM SETUP) menu is set to USER, save the setup data at power on to non-volatile memory. | |
| | | F10: EXEC | | Carry out the save operation. | |

a) This requires the optional BKDS-6073/6074 "M/E PVW/KEY OUT". *(Continued)*

# SETUP Menu Display and Settings

SETUP menu item 1: SYSTEM (Continued)

| Item | Function key | Function keys in submenu | | | Setting operation and settings |
|---|---|---|---|---|---|
| 1: SYSTEM | F6: INITIALIZE | *Initial screen* | RESET | F1: PANEL | Reset control panel. | Press a function key to select the item to be executed, then press F10 to get a confirmation screen. |
| | | | | F2: SWITCHR | Reset switcher. | |
| | | | F4: ALL CLEAR *(see page 11-3)* | | Clear all control panel and switcher settings, and recall the factory default setup data. | |
| | | | F6: PGM LOAD | | Load control panel and switcher software from floppy disk. | |
| | | | F8: AUTO EJECT | | Eject disk from floppy disk drive. | |
| | | | F10: EXEC | | Display confirmation screen. | |
| | | *Confirmation screen* | F9: YES | | Confirm execution. | Press either key. |
| | | | F10: NO | | Abandon execution. | |
| | F8: INFOR-MATION | Displays the following information.<br>• BZS-6020 software version<br>• Whether or not options are installed | | | | |

SETUP menu item 2: INPUT/OUTPUT

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 2: INPUT/ OUTPUT | F3: XPT ASSIGN (Assigns a signal to a signal selection button.) | F1: BUTTON NO. | Select signal selection button. | *For details of the procedure see page 11-4.* |
| | | F2: SOURCE | Display list of source signals to assign to the signal selection button. | |
| | | F4: NAME | Set the signal name. | |
| | | F6: SELECT | Confirm the assignment. | |
| | | F8: SOURCE SELECT | Move cursor. | |
| | F4: AUTO SELECT (Defines the key source signal.) | F3: FILL | Select the key fill signal. | *For details of the procedure see page 11-5.* |
| | | F6: SOURCE | Select the key source signal. | |
| | F5: INPUT CTRL (input signal adjustment) | Initial screen — F1: BUTTON NO. | Display signal information. | Holding down F1, press the desired cross-point button in the auxiliary bus block or key signal selection button in the downstream keyer block. The information for the selected button is displayed. |
| | | Initial screen — F10: INPUT ADJUST | Display adjustment screen. | — |
| | | Adjustment screen (for D2 systems) — F1: BUTTON NO. | Select the signal for which adjustment is to be made. | Holding down F1, press the desired cross-point button in the auxiliary bus block or key signal selection button in the downstream keyer block. The information for the selected button appears in reverse video. |
| | | Adjustment screen (for D2 systems) — F4: GEN LOCK (analog input only) | Select the GEN LOCK mode for analog input. | Press the function key to toggle between AUTO and SYNC. AUTO: Color burst signal is used as reference. SYNC: Horizontal synchronization signal is used as reference. |
| | | Adjustment screen (for D2 systems) — F5: HUE ADJUST (analog input only) | Hue adjustment for an analog input signal | Press the function key to highlight the function key indication in reverse video, then use knob 4 or the numeric keypad to change the value. (−45.0 to +45.0°; 0.1° steps) |

*(Continued)*

# SETUP Menu Display and Settings

SETUP menu item 2: INPUT/OUTPUT (Continued)

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|------|--------------|---|---|--------------------------------|
| 2: INPUT/ OUTPUT | F5: INPUT CTRL (input signal adjustment) | Adjustment screen (for D2 systems) | F6: SCH ADJUST (analog input only) / Adjust subcarrier horizontal phase of analog input signal | Press the function key to highlight the function key in reverse video, then use knob 4 or the numeric keypad to adjust the value. |
| | | | F7: PHASE ADJUST / Adjust horizontal phase of input signal. | Press the function key to highlight the function key indication in reverse video, then use knob 4 or the numeric keypad to change the value. (−128 to +127 CK (clock cycles); 1 CK steps) |
| | | | F9: VIDEO SHIFT (digital input only) / Automatic color framing compensation function for digital input signal | Press the function key to toggle the function on and off. ENBL: Automatic color framing compensation enabled. DSBL: Automatic color framing compensation disabled. |

[ Legends appearing in the menu screen ]
Signal types
    DIG: digital signal
    COL: analog color signal
    MONO: analog monochrome signal
GEN LOCK (analog input only): GEN LOCK
    mode
HUE (analog input only): Hue adjustment
    value
SCH(analog input only): Subcarrier horizontal
    phase

PHASE ADJUST: Horizontal phase
    adjustment value of input signal
CF: Input signal color frame phase with
    respect to reference sync signal
    during digital signal input
VIDEO SHIFT (digital input only):
    Automatic color framing
    compensation funcion setting

| | | | | |
|------|--------------|---|---|--------------------------------|
| | F5: INPUT CTRL | Adjustment screen (for D1 systems) | F1: BUTTON NO. / Select the signal for which adjustment is to be made. | Holding down F1, press the desired cross-point button in the auxiliary bus block or key signal selection button in the downstream keyer block. The information for the selected button appears in reverse video. |
| | | | F4: PHASE / Adjust horizontal phase of input signal. | Press the function key to highlight the function key indication in reverse video, then use knob 4 or the numeric keypad to change the value. (−128 to +127 CK (clock cycles); 1 CK steps) |

[ Legends appearing in the menu screen ]
PHASE ADJUST: Horizontal phase adjustment value of input signal

SETUP menu item 2: INPUT/OUTPUT

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|------|-------------|---|---|-------------------------------|
| 2: INPUT/ OUTPUT | F6: OUTPUT CTRL (output signal adjustment) | Initial screen | F1:OUTPUT SELECT — Change the output signal selection display page. | Press the function key to toggle between the two pages. |
| | | | F9:OUTPUT1 ADJUST — Display adjustment screen 1. | — |
| | | | F10:OUTPUT2 ADJUST — Display adjustment screen 2. | — |
| | | Adjustment screen 1 | F1:7.5 IRE SETUP (D2 only) — 7.5 IRE setup | Press the function key to toggle the function on or off. |
| | | | F2:SYSTEM PHASE — Adjust phase of output signal with respect to external sync signal input to switcher. | Press the function key to highlight the function key indication in reverse video, then use knob 4 to change the value. (−30 to +90 μsec; 70 nsec steps) |
| | | | F3:REF OUT PHASE — Adjust phase of output reference signal with respect to external sync signal input to switcher. | Press the function key to highlight the function key indication in reverse video, then use knob 4 to change the value. (−60 to +180 μsec; 70 nsec steps) |
| | | Adjustment screen 2 | F1:OUTPUT SELECT — Select the output signal for which adjustment is to be made. | Each time you press this key the cursor moves down. When the cursor is aligned on the required signal, make the adjustments using F3 to F6. |
| | | | F3:WHITE CLIP — Adjust white clip value for luminance signal. | Press the function key to highlight the function key indication in reverse video, and use knob 4 or the numeric keypad to change the value. D2 systems: (0 to 139 IRE; 1 IRE steps) D1 systems: (0 to 109% IRE; 1% steps) |
| | | | F4: DARK CLIP — Adjust dark clip value for luminance signal. | Press the function key to highlight the function key indication in reverse video, and use knob 4 or the numeric keypad to change the value. D2 systems: (−42 to 0 IRE; 1 IRE steps) D1 systems: (−7 to 0%; 1% steps) |

*(Continued)*

# SETUP Menu Display and Settings

SETUP menu item 2: INPUT/OUTPUT (Continued)

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 2: INPUT/OUTPUT | F6: OUTPUT CTRL (output signal adjustment) | Adjustment screen 2 | F5: BIT ROUND | Select the bit rounding function setting for 10-bit to 8-bit conversion. | Press the function key to toggle the function on or off. |
| | | | F6: V BLKG a) | Adjust vertical blanking interval. | Press the function key to highlight the setting in reverse video, then use knob 4 to change the value.<br>525-line systems: 10 to 20 H<br>625-line systems: 10 to 25 H |
| | F7: THRU MODE (settings relating to sync signals) | F3: BUTTON NO. | | Select input signal for which sync signal settings are to be changed. | Holding down F1, press the desired cross-point button in the auxiliary bus block or key signal selection button in the downstream keyer block. The information for the selected button appears in reverse video. |
| | | F5: INPUT THROUGH | | Select whether or not to replace the sync signal in the input signal by the internal sync signal generated by the switcher. b) | Select the sync signal for the input signal selected by F3.<br>Press the function key to toggle between the settings.<br>ON: Do not replace<br>OFF: Replace |
| | | F7: BUS SELECT | | Select the output bus for which setting is to be made. | Each time you press this key the cursor moves down. |
| | | F8: OUTPUT THROUGH | | Select whether or not to replace the sync signal in a bus output signal by the internal sync signal generated by the switcher. b) | Select the sync signal for the bus selected with F7.<br>Press the function key to toggle between the settings.<br>ON: Do not replace<br>OFF: Replace |
| | F8: ASSIGN OUTPUT (settings related to signal output from ASSIGN OUTPUTS connectors) | F5: SELECT | | Confirm selection of output signal assigned to both ASSIGN OUTPUTS connectors. | Confirms the output signal selected with F7. |
| | | F7: OUTPUT SELECT | | Select output signal. | Each time you press this key cursor moves down. |

a) Although on the DVS-6000C it is possible to switch between 525- and 625-line systems, this switching does not change the setting of the vertical blanking interval. It is therefore always necessary when switching systems to additionally reset the vertical blanking interval.

b) The sync signal in the input signal is only passed through on the output signal if both INPUT and OUTPUT settings are to ON, and if moreover both input and output signals are digital. Therefore, if either or both of the input and output signals is analog, or for signals generated in the switcher, the sync signal generated internally to the switcher is always provided with the output signal.

SETUP menu item 3: EFFECT

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 3: EFFECT | F3: KEYER | F1: KEY MEMORY | Enable or disable key memory *(see page 4-30).* | Press the function key to toggle the function on or off. |
| | | F2: CHR KEY MEMORY | Enable or disable chroma key memory *(see page 5-7).* | Press the function key to toggle the function on or off. |
| | | F4: KEYER | Select the keyer to which the F6 selection applies. | Each time you press this key the cursor moves down. |
| | | F5: SHADOW | Set maximum width of drop border and shadow *(see page 4-34).* | Use F4 to select the keyer for which you wish to make the setting, then press F6 to toggle between 4H and 8H. |
| | | KEY DEFAULT LEARN | F6: M/E-1 KEY 1 | Save default values for Clip, Gain, Density *(see page 4-30).* | When you press one of these function keys highlighting the function key indication in reverse video, the default values for the corresponding block are saved. When saving is completed, the function key indication returns to normal video. |
| | | | F7: M/E-1 KEY 2 | | |
| | | | F8: M/E-2 KEY 1 | | |
| | | | F9: M/E-2 KEY 2 | | |
| | | | F10: DSK | | |
| | F4: WIPE | F1: USER WIPE | Select whether data assigned to USER WIPE buttons is shared across wipe generators *(see page 4-60).* | Press the function key to toggle between the COMMON and INDPND settings. COMMON: USER WIPE buttons are common to M/E-1 and M/E-2, and common to COLOR BKGD1 and COLOR BKGD2. INDPND (independent): M/E-1, M/E-2, COLOR BKGD1 and COLOR BKGD2 are all independent. |
| | | F2: CENTER ADJUST | Adjust center position of wipe when POSITIONER parameters are 0. | Press the function key to highlight the function key indication in reverse video, then use knobs 3 and 4 to adjust the setting. Knob 3 (H Position): horizontal position (−16.00 to +15.75 pixels) Knob 4 (V Position): vertical position (−16.00 to +15.75 pixels) |

*(Continued)*

SETUP menu item 3: EFFECT (Continued)

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 3: EFFECT | F4: WIPE | F3: EDGE SOFT | Adjust edge of softness when EDGE SOFT parameter is OFF. | Press the function key to highlight the function key indication in reverse video, then use knob 4 or the numeric keypad to change the value. (−50.00 to +50.00%) |
| | F5: MATTE | F1: COLOR LIMIT | Enable or disable illegal color limiter. | Press the function key to toggle the illegal color limiter on or off. |
| | | LUM LEVEL | F2: MAX | Set maximum luminance level. | Press the function key to toggle between the two settings. D2 systems: 100 or 120 IRE D1 systems: 100% or 107% |
| | | | F3: MIN | Set minimum luminance level. | Press the function key to toggle between the two settings. D2 systems: 0 or −10 IRE D1 systems: 0% or −7% |
| | F6: CHR KEYER (for D2 systems only) | F1: INPUT SELECT | Select keyer to which settings of F2 through F4 apply. | Press the function key to toggle between 1 and 2. |
| | | F2: SIGNAL FORMAT | Select input component video signal format. | Press the function key to cycle through the four settings: β-CAM(0), β-CAM(7.5), RGB and SMPTE. |
| | | F4: SYNC | Select synchronization signal for input component video signal. | Press the function key to toggle between the settings. INT: Y signal or G signal EXT: synchronization signal input to SYNC connector |
| | | F6: PHASE ADJUST | Adjust horizontal phase of input component signal. | Press the function key to highlight the setting in reverse video, then use knob 4 or the numeric keypad to change the value. (−128 to +127 clock cycles (CK); 1 cycle steps) |

SETUP menu item 4: PERIPH

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|------|--------------|--------------------------|--|--------------------------------|
| 4: PERIPH | F3: AUX CTRL | F2: BUS SELECT | Select which of the AUX buses and the EDIT PVW bus the settings of F4 through F7 apply. | Each time you press this key the cursor moves down. |
| | | F4: PANEL | Enable or disable control by control panel. Settings for AUX 1 through AUX 6 and EDIT PVW are independent. | Press the function key to toggle between ENBL (enabled) and DSBL (disabled) settings. |
| | | F5: EDITOR | Enable or disable control by device connected to the EDITOR connector. Settings for AUX 1 through AUX 6 and EDIT PVW are independent. | Press the function key to cycle through the three settings: ENBL (enabled), DSBL (disabled) and MANUAL. Selecting MANUAL applies the selection in the ENABLE menu *(see page 10-6)*. |
| | | F6: DME 1 | Enable or disable control by device connected to the DME 1 (AUX BUS) connector. Settings for AUX 1 through AUX 6 and EDIT PVW are independent. | Press the function key to cycle through the three settings: ENBL (enabled), DSBL (disabled) and MANUAL. Selecting MANUAL applies the selection in the ENABLE menu *(see page 10-6)*. |
| | | F7: DME 2 | Enable or disable control by device connected to the DME 2 (AUX BUS) connector. Settings for AUX 1 through AUX 6 and EDIT PVW are independent. | Press the function key to cycle through the three settings: ENBL (enabled), DSBL (disabled) and MANUAL. Selecting MANUAL applies the selection in the ENABLE menu *(see page 10-6)*. |
| | F4: GPI INPUT | F1: PORT SELECT | Select input port to which settings apply. | *See page 11-6 for details of setting operation.* |
| | | F2: TRIGGER TYPE | Select GPI input trigger polarity. | |

*(Continued)*

# SETUP Menu Display and Settings

SETUP menu item 4: PERIPH (Continued)

| Item | Function key | Function keys in submenu | | | Setting operation and settings |
|------|--------------|---|---|---|--------------------------------|
| 4: PERIPH | F4: GPI INPUT | RE-GION | F4: SELECT | Select the block to which the triggered operation applies. | *See page 11-6 for details of setting operation.* |
| | | | F5: ALL | | |
| | | F7: SELECT | | Confirm selection made with F9. | |
| | | F9: ACTION SELECT | | Select action to be carried out when the trigger occurs. | |
| | F5: GPI OUTPUT | Initial screen | F1: BOX SELECT | Select GPI BOX number for settings. | *See page 11-7 for details of setting operation.* |
| | | | F2: ACTION | Display table of actions to activate BOX. | |
| | | | F4: PORT NO. | Display table of GPI output port numbers. | |
| | | | F6: SELECT | Confirm selection made with F8. | |
| | | | F8: ACTION SELECT or PORT SELECT | Select action to activate GPI BOX, or port number to be inserted in GPI BOX. | |
| | | | F10: PORT SETUP | Display output pulse selection screen. | |
| | | Output pulse selection screen | F1: PORT SELECT | Select output port number for which setting is to be made. | Each time you press this key the cursor moves down. |
| | | | F2: TRIGGER TYPE | Select output pulse polarity. | Pressing F2 cycles through the four possibilities. |
| | | | F4: PULSE WIDTH | Set pulse width. | Press the function key to highlight the setting in reverse video, then use knob 4 or the numeric keypad to change the value. (1 to 60 fields) |
| | | | F10: BOX SETUP | Return to initial screen. | — |

SETUP menu items 4 and 5:  PERIPH, UTILITY

| Item | Function key | Function keys in submenu | | Setting operation and settings |
|---|---|---|---|---|
| 4: PERIPH | F6:DME IF (DME interface settings) These settings allow you to obtain correct tally indications when selecting a signal output from the switcher to the DME and reinput to the switcher. | F1: DME SELECT | Select DME unit and connector name. | Each time you press this key the cursor moves down. After making this selection, make the F7 selection. |
| | | F3: RE-ENTRY | Select cross-point signal number of re-entrant output from AUX bus. | Holding down F3, press the cross-point button in the AUX bus block corresponding to the re-entrant output. |
| | | F5: SELECT | Confirm selection made with F7. | After pressing this function key to confirm the AUX bus selection, make the F3 selection. |
| | | F7: BUS SELECT | Select AUX bus output. | Align the cursor appropriately, and press F5 to confirm. |
| 5: UTILITY | F3: SHOT BOX (assigment of buttons in the shot box block) | F1: KEY FRAME | Allocate registers assigned to key frame recall buttons 1 through 10. | Pressing the function key cycles through the ten settings: Register numbers: 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-81, 81-90, or 91-99 |
| | | F2: SNAP SHOT | Allocate registers assigned to snapshot recall buttons 1 through 10. | Pressing the function key cycles through the ten settings: Register numbers: 1-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, or 91-99 |
| | | F4: SET MENU | Assign a menu display to a utility button. | *For details of the setting procedure, see page 11-10.* |
| | | F5: SET COMMAND | Assign a command operation to a utility button. | |
| | | F8: COMMAND SELECT | Select user command. | |
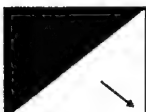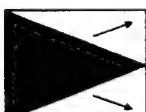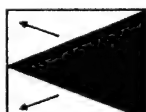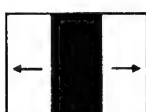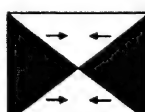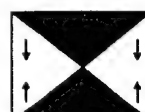
# Appendixes

# List of Wipe Patterns

## Standard wipes

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | | 4 | |
| 5 | | 6 | | 7 | | 8 | |
| 9 | | 10 | | 11 | | 12 | |
| 13 | | 14 | | 15 | | 16 | |
| 17 | | 18 | | 19 | | 20 | |
| 21 | | 22 | | 23 | | 24 | |

## Enhanced wipes
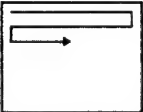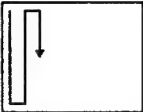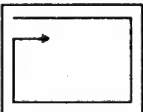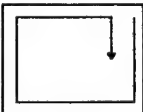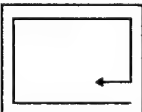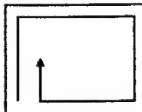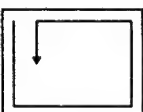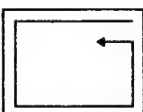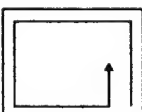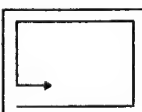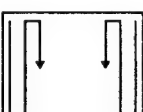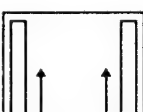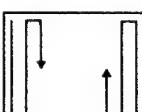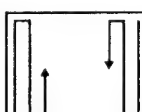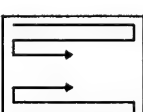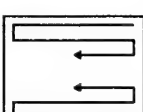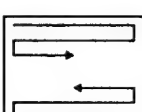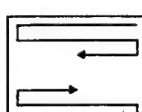
| 26 | ♥ | 27 | ★ | | | |
|----|---|----|---|---|---|---|

## Rotary wipes

| 100 | | 101 | | 102 | | 103 | |
|-----|---|-----|---|-----|---|-----|---|
| 104 | | 105 | | 106 | | 107 | |
| 150 | | 151 | | 156 | | 158 | |
| 160 | | 162 | | 516 | | 518 | |
| 604 | | 606 | | 624 | | 661 | |

# List of Wipe Patterns

## Mosaic wipes (including diamond dust wipe)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 200 | | 201 | | 202 | | 203 | |
| 206 | | 207 | | 208 | | 209 | |
| 210 | | 211 | | 212 | | 213 | |
| 250 | | 251 | | 252 | | 253 | |
| 254 | | 255 | | 256 | | 257 | |

## 《M/E-1 WIPE》
## 《M/E-2 WIPE》

**WIPE**
−M/E-1−

**WIPE**
−M/E-2−

| Item | |
|---|---|
| 1 | PATTERN |
| 2 | DIRECT/POS |
| 3 | MODIFY 1 |
| 4 | MODIFY 2 |
| 5 | USER WIPE |

**PAT-TERN**

| Function key indication | | Reference page |
|---|---|---|
| F1 | MIX | 4-56,4-62 |
| F2 | MAIN | |
| F3 | SUB | |
| F5 | PAGE1 | |
| F6 | PAGE2 | |
| F7 | PAGE3 | |
| F8 | PAGE4 | |
| F10 | ENTER | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | MIX | 4-57,4-63 |
| F2 | MAIN | |
| F3 | SUB | |
| F9 | ADJUST SELECT | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | MIX | 4-57,4-62 |
| F2 | MAIN | |
| F3 | SUB | |
| F5 | PAGE1 | |
| F7 | PAGE3 | |
| F8 | PAGE4 | |
| F10 | ENTER | 4-57,4-63 |

**DIREC-TION**
**POSI-TIONER**

| Function key indication | | Reference page |
|---|---|---|
| F1 | NORMAL | 4-53,4-63 |
| F2 | NORMAL/REVERSE | |
| F3 | REVERSE | |
| F5 | POS | 4-58,4-63 |
| F6 | NORMAL | 4-58,4-64 |
| F7 | AUTO CENTER | |

**EDGE TYPE**
**ADJUST**

| Function key indication | | Reference page |
|---|---|---|
| F1 | OFF | 4-54,4-64 |
| F2 | BORDER | |
| F3 | SOFT | |
| F4 | SOFT BORDER | |
| F5 | ASPECT | |
| F6 | MULTI | 4-54,4-65 |
| F7 | SPLIT | |
| F9 | SELECT | |
| F10 | MORE | |

**MODULA-TION**
**ROTA-TION**

| Function key indication | | Reference page |
|---|---|---|
| F1 | H | 4-54,4-65 |
| F2 | V | |
| F4 | OFF | 4-59,4-65 |
| F5 | ANGLE | |
| F6 | MAG | |
| F7 | SPEED | 4-59,4-66 |
| F9 | ADJUST SELECT | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | LEARN USER | 4-60,4-66 |
| F3 | 1 | |
| F4 | 2 | |
| F5 | 3 | |
| F6 | 4 | |
| F7 | 5 | |
| F8 | 6 | |
| F9 | 7 | |
| F10 | 8 | |

# Menu System

《M/E-1 TRANSITION》
《M/E-2 TRANSITION》

| TRANS |
| --M/E-1-- |

| TRANS |
| --M/E-2-- |

| Item | |
|---|---|
| 1 | TYPE/LIMIT |

MIX TYPE

| Function key indication | | Reference page |
|---|---|---|
| F1 | NORMAL | 4-18,4-20 |
| F2 | SUPER | |
| F3 | NAM | |
| F5 | TRANS LIMIT | |

《DSK》

| DSK |

| Item | |
|---|---|
| 1 | TYPE/FILL |
| 2 | EDGE |
| 3 | MASK |

KEY TYPE
KEY FILL

| Function key indication | | Reference page |
|---|---|---|
| F1 | LUM | 4-47 |
| F2 | LINEAR | |
| F5 | KEY INVERT | 4-29,4-47 |
| F7 | FILL BUS | 4-48 |
| F8 | MATTE | |
| F9 | ADJUST SELECT | |

EDGE TYPE

ADJUST

| Function key indication | | Reference page |
|---|---|---|
| F1 | NORMAL | 4-34,4-48 |
| F2 | BORDER | |
| F3 | DROP BORDER | |
| F4 | SHADOW | 4-34,4-49 |
| F5 | OUTLINE | |
| F6 | SOFT EDGE | |
| F9 | SELECT | |
| F10 | MORE | |

MASK TYPE

MASK SOURCE

| Function key indication | | Reference page |
|---|---|---|
| F1 | OFF | 4-37,4-50 |
| F2 | KEY MASK | |
| F3 | BKGD MASK | |
| F4 | BOX | |
| F5 | MASK BUS | 4-50 |
| F8 | MASK INVERT | |
| F10 | ADJUST MORE | |

## 《COLOR BKGD 1》
## 《COLOR BKGD 2》

| COLOR BKGD 1 | COLOR BKGD 2 |
|---|---|

**Item**

| 1 | MATTE |
|---|---|
| 2 | MODIFY |
| 3 | USER WIPE |

ADJUST SELECT

| Function key indication | | Reference page |
|---|---|---|
| F1 | MIX | 4-69,4-71 |
| F2 | PATTERN | |
| F8 | MATTE 1 | |
| F9 | MATTE 2 | |
| F10 | MIX | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | MATTE | 4-69,4-71 |
| F10 | ENTER | |

ROTA-TION

| Function key indication | | Reference page |
|---|---|---|
| F1 | BORDER | 4-72 |
| F2 | OFF | |
| F3 | ANGLE | |
| F4 | SPEED | |
| F5 | ASPECT | |
| F6 | MULTI | |
| F7 | POS | |
| F8 | INVERT | |
| F9 | ADJUST SELECT | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | LEARN USER | 4-60,4-73 |
| F3 | 1 | |
| F4 | 2 | |
| F5 | 3 | |
| F6 | 4 | |
| F7 | 5 | |
| F8 | 6 | |
| F9 | 7 | |
| F10 | 8 | |

《CHR KEY》

| TYPE | Function key indication | | Reference page |
|---|---|---|---|
| | F1 | CLEAN | 5-4,5-12 |
| | F2 | RGB | |
| FRGD | F3 | CH1 | |
| | F4 | CH2 | |

| AUTO CHR KEY | Function key indication | | Reference page |
|---|---|---|---|
| | F1 | KEY ACTIVE | 5-9,5-12 |
| | F2 | COLOR CANCEL | |
| | F3 | Y BALANCE | |
| | F4 | WINDOW | 5-9,5-13 |
| | F6 | SAMPLE MARK | 5-8,5-13 |
| | F7 | AUTO START | |
| | F9 | ADJUST SELECT | |

| CHR KEY | Item |
|---|---|
| | 1 D2 system : SETUP |
| | D1 system : CH SELECT |
| | 2 ADJUST |
| | 3 VIDEO CORRECT |
| | 4 MASK |

| D2 system | Function key indication | | Reference page |
|---|---|---|---|
| | F1 | FRGD | 5-9,5-13 |
| | F2 | BKGD | |
| | F3 | RESOLUTION | |
| | F9 | ADJUST SELECT | |

| D1 system | Function key indication | | Reference page |
|---|---|---|---|
| | F1 | FRGD | 5-9,5-14 |

| | Function key indication | | Reference page |
|---|---|---|---|
| MASK TYPE | F1 | OFF | 5-10,5-14 |
| | F2 | KEY MASK | |
| | F3 | BKGD MASK | |
| MASK SOURCE | F4 | BOX | |
| | F5 | FRAME MEM1 | |
| | F6 | FRAME MEM2 | |
| | F7 | MASK INVERT | 5-14 |
| | F10 | ADJUST MORE | |

## 《FRAME MEMORY 1》
## 《FRAME MEMORY 2》

| FRAME MEM 1 | FRAME MEM 2 |
| --- | --- |

| Item | |
| --- | --- |
| 1 | MANUAL |
| 2 | PAINT |
| 3 | MOVE |
| 4 | LINK |
| 5 | LOCK |

| Function key indication | | Reference page |
| --- | --- | --- |
| F1 | FREEZE | 5-19,5-25 |
| F2 | OUTPUT SELECT | |
| F3 | LAST X | 5-21,5-25 |
| F4 | MEMORY CLEAR | |
| F5 | FREEZE MODE [a)] | 5-19,5-25 |
| F6 | INPUT MASK | |
| F7 | NAM | |
| F8 | MASK SOURCE | 5-20,5-25 |
| F9 | MASK INVERT | 5-26 |
| F10 | ADJUST MORE | |

| Function key indication | | Reference page |
| --- | --- | --- |
| F1 | PAINT | 5-21,5-26 |
| F3 | LAST X | |
| F4 | MEMORY CLEAR | |
| F5 | FREEZE MODE [a)] | 5-26 |
| F6 | NAM | 5-22,5-26 |
| F7 | M/E-1 WIPE NO. | 5-26 |
| F9 | ADJUST SELECT | |

| Function key indication | | Reference page |
| --- | --- | --- |
| F1 | STILL | 5-22(2), |
| F2 | LIVE | 5-26 |
| F3 | COLOR | 5-22(2), |
| F4 | B & W | 5-27 |
| F5 | POS CENTER | |
| F6 | INPUT MASK | |
| F7 | MASK SOURCE | |
| F8 | MASK INVERT | |
| F9 | ADJUST SELECT | 5-27 |

PICTURE

MOVE MODE

| Function key indication | | Reference page |
| --- | --- | --- |
| F1 | MEMORY LINK | 5-23, |
| F2 | WIPE LINK | 5-28 |
| F3 | LINK | |
| F4 | BUTTON NO. | |
| F6 | BKGD 1 HUE ROTATE | 5-22,5-28 |

CH-2 INPUT

a) For D1 systems only

《REGISTER》

| Function key indication | | Reference page |
|---|---|---|
| F1 | COPY | 7-12 |
| F2 | SWAP | |
| F3 | MOVE | |
| F4 | MERGE | |
| F5 | DELETE | |
| F6 | NAME | |
| F7 | ALL | |
| F8 | BLOCK | |
| F9 | ONE | |
| F10 | EXEC | |

EDIT — F1–F6
REGISTER SELECT — F7–F10

| Function key indication | | Reference page |
|---|---|---|
| F9 | YES | 7-13,7-14 |
| F10 | NO | |

REGS

| Item | |
|---|---|
| 1 | EFFECT |
| 2 | SNAP SHOT |
| 3 | ATTRIB EDIT |
| 4 | CONFIG USER |

| Function key indication | | Reference page |
|---|---|---|
| F1 | COPY | 7-5,7-13 |
| F2 | SWAP | 7-13 |
| F3 | MOVE | |
| F4 | DELETE | 7-6,7-13 |
| F5 | NAME | 7-8,7-13 |
| F7 | ALL | 7-13 |
| F8 | BLOCK | |
| F9 | ONE | |
| F10 | EXEC | |

EDIT — F1–F5
REGISTER SELECT — F7–F10

For D1 systems

| Function key indication | | Reference page |
|---|---|---|
| F1 | COLOR BKGD 1 | 7-10,7-16 |
| F2 | COLOR BKGD 2 | |
| F3 | CHR KEY 1 | |
| F4 | CHR KEY 2 | |
| F5 | FRAME MEM 1 | |
| F6 | FRAME MEM 2 | |
| F7 | AUX BUS | |

USER REGION

For D2 systems

| Function key indication | | Reference page |
|---|---|---|
| F1 | COLOR BKGD 1 | 7-10,7-16 |
| F2 | COLOR BKGD 2 | |
| F3 | CHR KEY | |
| F4 | FRAME MEM 1 | |
| F5 | FRAME MEM 2 | |
| F6 | AUX BUS | |

USER REGION

a) Displayed only when "DELETE" was selected in the parent menu.

With cursor on GPI

GPI OUTPUT BOX NO.

| Function key indication | | Reference page |
|---|---|---|
| F1 | BOX 1 | 7-9, 7-14 |
| F2 | BOX 2 | |
| F3 | BOX 3 | |
| F4 | BOX 4 | |
| F5 | BOX 5 | |
| F6 | BOX 6 | |
| F7 | BOX 7 | |
| F8 | BOX 8 | |
| F9 | OFF | |

With cursor on COLOR BKGD

EFF DISS

| Function key indication | | Reference page |
|---|---|---|
| F3 | COLOR BKGD 1 | 7-15 |
| F5 | COLOR BKGD 2 | |

With cursor on CHR KEY

EFF DISS

| Function key indication | | Reference page |
|---|---|---|
| F3 | CHR KEY 1 b) | 7-15 |
| F4 | CHR KEY a) | |
| F5 | CHR KEY 2 b) | |

With cursor on AUX

XPT DISABLE

| Function key indication | | Reference page |
|---|---|---|
| F1 | AUX 1 | 7-15 |
| F2 | AUX 2 | |
| F3 | AUX 3 | |
| F4 | AUX 4 | |
| F5 | AUX 5 | |
| F6 | AUX 6 | |

With cursor on ME-1, ME-2, or DSK

ME-1, ME-2 or DSK ATTRIBUTE

| Function key indication | | Reference page |
|---|---|---|
| F3 | EFF DISS | 7-14 |
| F4 | AUTO TRANS | |
| F5 | XPT DISABLE | |

a) For D1 systems
b) For D2 systems

## 《DISK》

```
DISK ─── Item
         ┌───┬──────────┐
         │ 1 │ EFFECT   │
         │ 2 │ SNAP SHOT│
         │ 3 │ SETUP    │
         │ 5 │ EJECT    │
         └───┴──────────┘
```

| Function key indication | | Reference page |
|---|---|---|
| F1 | SAVE | 8-4,8-7 |
| F2 | LOAD | 8-6,8-8 |
| F3 | DELETE | 8-12,8-13, |
| F4 | COPY | 8-14 |
| F5 | RENAME | 8-9 |
| F6 | LOCK | 8-12,8-13, |
| F7 | ALL | 8-14 |
| F8 | BLOCK | |
| F9 | ONE | |
| F10 | EXEC | |
| F11 | FORMAT | 8-10 |
| F12 | LABEL | 8-12,8-13, 8-14 |

| Function key indication | | Reference page |
|---|---|---|
| F9 | YES | 8-13,8-14, |
| F10 | NO | 8-15 |

## 《COPY》

| Function key indication | | Reference page |
|---|---|---|
| F6 | XPT DISABLE | 9-4,9-10 |
| F8 | SWAP | |
| F10 | COPY | |

```
COPY ─── Item
         ┌───┬────────────────┐
         │ 1 │ M/E            │
         │ 2 │ KEYER          │
         │ 3 │ MATTE          │
         │ 4 │ WIPE           │
         │ 5 │ CHR KEY        │
         │   │ (D1 system only)│
         └───┴────────────────┘
```

| Function key indication | | Reference page |
|---|---|---|
| F6 | XPT DISABLE | 9-5,9-10 |
| F8 | SWAP | |
| F10 | COPY | |

| Function key indication | | Reference page |
|---|---|---|
| F8 | SWAP | 9-11 |
| F10 | COPY | |

| Function key indication | | Reference page |
|---|---|---|
| F8 | SWAP | 9-11 |
| F10 | COPY | |

《**ENABLE**》

| ENBL |

| **Item** | |
|---|---|
| 1 | ENABLE |
| 2 | SAFE TITLE |
| 3 | GPI |

| **Function key indication** | | **Reference page** |
|---|---|---|
| F1 | EDITOR | 10-4,10-7 |
| F2 | GPI | |
| F3 | DME 1 | |
| F4 | DME 2 | |

| **Function key indication** | | **Reference page** |
|---|---|---|
| F1 | PGM | 10-4,10-7 |
| F2 | EDIT PVW | |

| **Function key indication** | | **Reference page** |
|---|---|---|
| F1 | GPI INPUT TEST | 10-5,10-7 |
| F3 | GPI OUTPUT | |

《**STATUS**》

| STAT |

| **Function key indication** | | **Reference page** |
|---|---|---|
| F1 | M/E-1 | 3-8,3-9 |
| F2 | M/E-2 | |
| F3 | OTHERS | |
| F4 | SYSTEM | 3-8,3-10 |

| **Function key indication** | | **Reference page** |
|---|---|---|
| F10 | MORE | 3-9 |

《SETUP》

| Function key indication | | Reference page |
|---|---|---|
| F1 | DATE | 11-12 |
| F2 | TIME | |
| F3 | BEEPER | |
| F4 | PW ON MODE | |
| F5 | SWITCH TIMING | |
| F6 | SCREEN SAVER | |
| F7 | SCREEN FORMAT (D1 system only) | 11-12(2) |

| Function key indication | | Reference page |
|---|---|---|
| F1 | BUS TOGGLE | 4-25, |
| F2 | FADE TO BLACK | 11-12(2) |
| F3 | DSK AUTO DROP | 11-13 |
| F4 | PGM BOX | 10-3, 11-13 |
| F5 | PGM CROSS | |
| F6 | PVW BOX | |
| F7 | PVW CROSS | |
| F8 | M/E-1 | 11-13 |
| F9 | M/E-2 | |

SAFE TITLE

PVW SELECT

| Function key indication | | Reference page |
|---|---|---|
| F3 | SYSTEM SETUP | 11-12, 11-12(2) |
| F4 | OPERAT MODE | 11-12(2), 11-13 |
| F5 | SAVE | 11-13 |
| F6 | INITIALIZE | 11-14 |
| F8 | INFORMATION | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | SETUP | 11-3, 11-13 |
| F2 | INITIAL PANEL | |
| F10 | EXEC | |

SAVE

| Item |
|---|
| 1 | SYSTEM |
| 2 | INPUT/OUTPUT |
| 3 | EFFECT |
| 4 | PERIPH |
| 5 | UTILITY |

SETUP

| Function key indication | | Reference page |
|---|---|---|
| F1 | PANEL | 11-3, 11-14 |
| F2 | SWITCHR | |
| F4 | ALL CLEAR | |
| F6 | PGM LOAD | 11-14 |
| F8 | AUTO EJECT | |
| F10 | EXEC | |

RESET

| Function key indication | | Reference page |
|---|---|---|
| F9 | YES | 11-14 |
| F10 | NO | |

# Menu System

| Function key indication | | Reference page |
|---|---|---|
| F1 | BUTTON NO. | 11-4,11-15 |
| F2 | SOURCE | |
| F4 | NAME | |
| F6 | SELECT | |
| F8 | SOURCE SELECT | |

D2 system

| Function key indication | | Reference page |
|---|---|---|
| F1 | BUTTON NO. | 11-15 |
| F4 | GEN LOCK[a] | |
| F5 | HUE ADJUST[a] | |
| F6 | SCH ADJUST[a] | |
| F7 | PHASE ADJUST | |
| F9 | VIDEO SHIFT[b] | |

| Function key indication | | Reference page |
|---|---|---|
| F3 | FILL | 11-5,11-15 |
| F6 | SOURCE | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | BUTTON NO. | 11-15 |
| F10 | INPUT ADJUST | |

D1 system

| Function key indication | | Reference page |
|---|---|---|
| F1 | BUTTON NO. | 11-16 |
| F4 | PHASE ADJUST | |

| Function key indication | | Reference page |
|---|---|---|
| F3 | XPT ASSIGN | 11-15 |
| F4 | AUTO SELECT | |
| F5 | INPUT CTRL | |
| F6 | OUTPUT CTRL | 11-17 |
| F7 | THRU MODE | 11-18 |
| F8 | ASSIGN OUTPUT | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | OUTPUT SELECT | 11-17 |
| F9 | OUTPUT1 ADJUST | |
| F10 | OUTPUT2 ADJUST | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | 7.5IRE SETUP (D2 system only) | 11-17 |
| F2 | SYSTEM PHASE | |
| F3 | REF OUT PHASE | |

| Function key indication | | Reference page |
|---|---|---|
| F3 | BUTTON NO. | 11-18 |
| F5 | INPUT THROUGH | |
| F7 | BUS SELECT | |
| F8 | OUTPUT THROUGH | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | OUTPUT SELECT | 11-17 |
| F3 | WHITE CLIP | |
| F4 | DARK CLIP | |
| F5 | BIT ROUND | |
| F6 | V BLKG | |

| Function key indication | | Reference page |
|---|---|---|
| F5 | SELECT | 11-18 |
| F7 | OUTPUT SELECT | |

a) Analog input only
b) Digital input only

A-16 Appendixes

| Function key indication | | Reference page |
|---|---|---|
| F1 | KEY MEMORY | 11-19 |
| F2 | CHR KEY MEMORY | |
| F4 | KEYER | |
| F5 | SHADOW | |
| F6 | M/E-1 KEY 1 | |
| F7 | M/E-1 KEY 2 | |
| F8 | M/E-2 KEY 1 | |
| F9 | M/E-2 KEY 2 | |
| F10 | DSK | |

KEY DEFAULT LEARN

| Function key indication | | Reference page |
|---|---|---|
| F3 | KEYER | 11-19 |
| F4 | WIPE | |
| F5 | MATTE | 11-20 |
| F6 | CHR KEYER (D2 system only) | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | USER WIPE | 11-19 |
| F2 | CENTER ADJUST | |
| F3 | EDGE SOFT | 11-20 |

| Function key indication | | Reference page |
|---|---|---|
| F1 | COLOR LIMIT | 11-20 |
| F2 | MAX | |
| F3 | MIN | |

LUM LEVEL

| Function key indication | | Reference page |
|---|---|---|
| F1 | INPUT SELECT | 11-20 |
| F2 | SIGNAL FORMAT | |
| F4 | SYNC | |
| F6 | PHASE ADJUST | |

# Menu System

| Function key indication | | Reference page |
|---|---|---|
| F2 | BUS SELECT | 11-21 |
| F4 | PANEL | |
| F5 | EDITOR | |
| F6 | DME1 | |
| F7 | DME2 | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | PORT SELECT | 11-6,11-21 |
| F2 | TRIGGER TYPE | |
| F4 | SELECT | |
| F5 | ALL | |
| F7 | SELECT | |
| F9 | ACTION SELECT | |

RE-GION

| Function key indication | | Reference page |
|---|---|---|
| F3 | AUX CTRL | 11-21 |
| F4 | GPI INPUT | 11-6,11-21 |
| F5 | GPI OUTPUT | 11-7,11-22 |
| F6 | DME IF | 11-23 |

| Function key indication | | Reference page |
|---|---|---|
| F1 | BOX SELECT | 11-7,11-22 |
| F2 | ACTION | |
| F4 | PORT NO. | |
| F6 | SELECT | |
| F8 | ACTION SELECT /PORT SELECT | |
| F10 | PORT SETUP | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | PORT SELECT | 11-7,11-22 |
| F2 | TRIGGER TYPE | |
| F4 | PULSE WIDTH | |
| F10 | BOX SETUP | |

| Function key indication | | Reference page |
|---|---|---|
| F1 | DME SELECT | 11-23 |
| F3 | RE-ENTRY | |
| F5 | SELECT | |
| F7 | BUS SELECT | |

| Function key indication | | Reference page |
|---|---|---|
| F3 | SHOT BOX | 11-23 |

| Function key indication | | Reference page |
|---|---|---|
| F1 | KEY FRAME | 11-23 |
| F2 | SNAP SHOT | |
| F4 | SET MENU | 11-10,11-23 |
| F5 | SET COMMAND | |
| F8 | COMMAND SELECT | |

## 《KEY FRAME》

| KF PATH | | | |
|---|---|---|---|

DISPLAY MODE

| Function key indication | | Reference page |
|---|---|---|
| F1 | TIME LINE | 5-51 |
| F2 | EXPAND | |
| F3 | DETAIL | |
| F5 | PAUSE | |
| F6 | RECALL MODE | |
| F7 | JOG DIAL | |
| F10 | PATH | |

CURVE

HUE

| Function key indication | | Reference page |
|---|---|---|
| F1 | OFF | 5-44 |
| F2 | STEP | |
| F3 | LINEAR | |
| F4 | S-CURVE | |
| F5 | SPLINE | |
| F6 | CW | |
| F7 | CCW | |
| F8 | LONG | |
| F9 | SHORT | |
| F10 | TIME LINE | |